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TRUST DEVELOPMENT IN SMALL TEAMS

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Abstract

This paper discusses the creation of a model of trust development within small military teams. This work has 3 sections. In the first section, the most recent literature relevant to the issue of trust in small teams is reviewed. Limitations of existing models relevant to trust in teams are considered. In the second section, a preliminary model of trust in small military teams is proposed. This model argues that person-based and category-based factors interact with contextual factors to influence judgements of trust. The third section discusses an effort to refine the preliminary model of trust development in small teams. Focus groups conducted with members and leaders of small military teams provided a strong informal validation of the model. Several factors hypothesized in the preliminary model to impact on trust development in small teams were supported by both qualitative and quantitative results. In addition, the process by which trust develops in small teams was also supported. Based on these results, several refinements were made to the preliminary model, and recommendations about future research are explored.

Résumé

Ce document concerne la création d'un modèle de développement de la confiance au sein des petites équipes militaires. Il est divisé en trois sections. Dans la première, on examine la documentation la plus récente au sujet de la confiance au sein des petites équipes. On y analyse également les limites des modèles en place. Dans la deuxième section, on propose un modèle préliminaire de la confiance au sein des petites équipes militaires. Ce modèle révèle que des facteurs fondés sur les personnes et sur les catégories interagissent avec des facteurs contextuels et influencent les jugements de confiance. La troisième section porte sur le travail réalisé afin de perfectionner le modèle préliminaire de développement de la confiance au sein de petites équipes. Des groupes de consultation organisés avec des membres et des chefs de petits groupes militaires ont permis de valider officieusement le modèle. On a également recueilli des résultats tant qualitatifs que quantitatifs appuyant plusieurs facteurs du modèle préliminaire qui, selon les estimations, devaient avoir une incidence sur le développement de la confiance au sein de petites équipes. En outre, ces rencontres ont confirmé la validité du processus grâce auquel la confiance se développe au sein de petites équipes. En fonction de ces résultats, plusieurs améliorations ont été apportées au modèle préliminaire, et des recommandations relatives à la recherche future ont été étudiées.

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Executive Summary

This paper discusses the development of a model of trust development in small military teams. This work has 3 sections.

In the first section, the most recent trust literature relevant to the issue of trust in small teams is reviewed. As a whole, trust research and theory conducted in the last 2 years strongly suggests that the scientific study of trust is progressing at a rapid pace. Trust theory and research shows evidence of greater sophistication and complexity of ideas, and work in trust is being increasingly integrated. Five trends are evident in the newer trust literature. These include developments within the following areas:

- Conceptualizing trust
- Understanding the effects of trust in organizational settings
- Trust in leader theory and research
- Trust in teams theory and research
- Role of attribution processes
- Innovations in trust

Limitations of existing models of trust relevant to trust in teams are also considered. In general, existing models still fail to consider the role of context adequately.

In the second section, a preliminary model of trust in small military teams is developed. This model argues that qualities related to the trustee, the trustor, and several factors related to the context in which decisions about trust are made influence the trust development process. This model proposes that person-based and category-based factors interact with contextual factors to influence judgements of trust.

The third section discusses an informal validation of the preliminary model of trust in small teams. Several focus groups were conducted with both crew members and leaders of small military teams. These focus groups provided a good informal validation of the model, and several factors hypothesized to impact on trust development in the preliminary model were supported at both a quantitative and qualitative level. The trust development process, as modelled, was also supported. Both the factors that influence trust within teams, and the process by which trust develops were refined to create the final model of trust development within teams. This model depicts trust development as a process created by the interaction of qualities of the trustee with the contextual factors. Based on the refined model of trust in small military teams, research possibilities for exploring trust in teams from both a short-term and a long-term perspective are explored.

Sommaire

Ce document concerne la création d'un modèle de développement de la confiance au sein de petites équipes militaires. Il est divisé en trois sections.

Dans la première, on examine la documentation la plus récente au sujet de la confiance au sein de petites équipes. Dans l'ensemble, la recherche et les théories des deux dernières années au sujet de la confiance suggèrent fortement que l'étude scientifique de la confiance progresse à un rythme rapide. Les théories et la recherche sur la confiance démontrent que les idées sont plus perfectionnées et complexes, et le travail relatif à la confiance est de plus en plus intégré. On a cerné cinq tendances dans la documentation récente sur la confiance, y compris des nouveautés dans les secteurs suivants :

- conceptualisation de la confiance;
- compréhension des effets de la confiance dans des contextes organisationnels;
- théories et recherche sur la confiance accordée aux chefs;
- théories et recherche sur la confiance au sein d'équipes;
- rôle des processus d'attribution;
- innovations dans le domaine de la confiance.

Cette section examine également les limites des modèles existants de la confiance au sein d'équipes. En général, ces modèles n'accordent toujours pas une importance adéquate au rôle du contexte.

La deuxième section porte sur la conception d'un modèle préliminaire de confiance au sein de petites équipes militaires. Ce modèle fait valoir que le processus de développement de la confiance est influencé par les qualités liées à la personne qui reçoit la confiance, à la personne qui accorde cette confiance, ainsi qu'à plusieurs facteurs relatifs au contexte dans lequel les décisions sur la confiance sont prises. Il révèle que les facteurs fondés sur les personnes et sur les catégories interagissent avec les facteurs contextuels et influencent les jugements de confiance.

La troisième section se rapporte à la validation officieuse du modèle préliminaire de la confiance au sein de petites équipes. Plusieurs groupes de consultation ont été organisés avec des membres et des chefs de petites équipes militaires. Ils ont permis de valider officieusement le modèle, ainsi que de recueillir des résultats tant quantitatifs que qualitatifs appuyant plusieurs facteurs du modèle préliminaire qui, selon les estimations, devaient avoir une incidence sur le développement de la confiance. Le processus de développement de la confiance, tel qu'établi dans le modèle, a également été corroboré. Les facteurs influençant la confiance au sein des équipes et le processus par lequel la confiance développe ont été améliorés en vue de concevoir un modèle final de développement de la confiance au sein de petites équipes. Ce modèle final présente le développement de la confiance comme un processus créé grâce à l'interaction des qualités de la personne qui reçoit la confiance et des facteurs contextuels. Cette section examine des possibilités à court et à long terme pour la recherche sur la confiance au sein des équipes, à la lumière du nouveau modèle.

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1 Model of Trust in Small Teams – Statement of Work

1.1 Background

A previous contract with DRDC – Toronto (Adams, Bryant and Webb, 2001) provided an extensive literature review pertaining to trust in small infantry teams. This review found that the study of trust is still at a relatively early stage of development, and that there are no theories of trust that directly address trust within small military teams. Nonetheless, two theoretical views of trust were identified, one in which trust is based on long experiences with an individual (person-based) and the other based on recognition of features in an individual previously associated with trust (category based). Neither model is well-developed (especially with respect to trust in small military teams), nor do they adequately take account of various situational variables. Existing models of trust have worked to understand trust within a general domain. As such, within a military context, one might expect unique factors to extent an impact. A model of trust tailored to small military teams is critical for understanding the dynamics of trust within a military context.

1.2 Aim

This work is intended to be a first step in addressing the creation of a comprehensive model of trust development in small military teams. Although focused on relationships between all members of small military teams, this work also gives specific attention to the relationship between a team member and the team leader within this context. This research will work to identify the key factors impacting on trust within small military teams, and will help refine a preliminary model of trust development in small military teams. The other issue that needs extensive investigation is the methodology for studying trust to validate any proposed new model.

1.3 Organization of the Report

There are three main sections to this report. In the first section, the most recent trust literature relevant to the issue of trust in small teams is reviewed. As a whole, trust research and theory conducted in the last 2 years strongly suggests that the scientific study of trust is progressing at a rapid pace. Trust theory shows evidence of greater sophistication and complexity of ideas, and trust theory is being increasingly integrated, as evidenced by two meta-analytic efforts. This trend is very encouraging. Limitations of existing models of trust relevant to trust in teams are also considered.

In the second section, a preliminary model of trust in small military teams is developed. This model argues that qualities related to the trustee, the trustor, and several factors related to the context in which decisions about trust are made influence the trust development process. The model depicts this process in terms of a feedback loop caused by trust-related outcomes, whereby trust decisions either promote or denigrate future judgements of trust. This model proposes that person-based and category-based factors interact with contextual factors to influence judgements of trust.

The third section discusses an informal validation of the preliminary model of trust in small teams. In order to validate the model, several focus groups were conducted with both members and leaders of small military teams. These focus groups provided a good validation of the model, and several factors hypothesized to impact on trust development in the preliminary model were supported. The focus groups also showed that the trust development process as outlined matched well with the experiences of small military team members. Based on this research, several refinements were made to the model, in terms of the factors in trust development within a team, as well as to the trust development process.

2 Update of Trust in Teams Literature

A previous literature review relevant to trust in small teams (Adams, Bryant and Webb, 2001) was completed in 2000, with the literature search having been conducted during the summer of 1999. Since that time, research and theory related to trust has advanced on a number of fronts. The goal of this section is to update the existing trust review by considering work published since the last review, as well as examining other research and theory relevant to the issue of trust in teams that could not be addressed in the previous review, due to time constraints. Moreover, in order to better understand the relationship between a leader and a follower in small military teams, more detail is provided about this relationship in this update. An updated search was conducted using the same keywords, databases, and methodology used in the last review (for a full account, see Adams, Bryant, and Webb, 2001).

Our updated review of the more recent trust literature suggests that the scientific study of trust is rapidly maturing, and there is evidence of increasing interest in the study of trust, and increasing sophistication in conceptualising and studying trust. Within recent trust theory and research, the following areas received increased attention and interest:

- Conceptualizing trust
- Understanding the effects of trust in organizational settings
- Trust in leader theory and research
- Trust in teams theory and research
- Role of attribution processes
- Innovations in trust

2.1 Developments in Conceptualising Trust

There have been several conceptual shifts evidenced in the literature since the last review. The distinction between trust as a psychological state and as choice behaviour appears to be waning somewhat in favour of trust being conceptualised as a psychological state. A recent review, for example, selectively excluded articles that focused on trust as only a behaviour in favour of those that involved the conceptualisation of trust as both a psychological state and a behaviour (Dirks and Ferrin, 2002). This shift will perhaps accommodate some of the difficulties in understanding trust as purely a choice behaviour. If trust is conceptualised only as choice behaviour, it may be most difficult to argue that trust is the sole underlying cause of the choice behaviour, as many forms of choice behaviour (e.g. cooperation) are possible without the intervention of trust. If trust as a psychological state is not considered, it may be difficult to be certain that trust is really at play.

Other work also shows trust behaviour being relegated to a secondary role. A definition presented in a recent paper by Costa, Taillieu and Roe (2001) relegates trust behaviours to the status of a manifestation of trust as a psychological state.

> *Trust is a psychological state that manifests itself in the behaviours towards others, is based on the expectations made upon behaviours of these others, and on the perceived motives and intentions in situations entailing risk for the relationship with those others.*

With this definition, it is clear that trust as a psychological state is the core of the definition, and that trust behaviours can only logically exist as the manifestation of this psychological state.

In addition to this subtle shift, there is also evidence that trust as the focus of scientific study has progressed, and appears to have entered a more theoretically integrated stage. One of the criticisms of trust theory and research, both in the previous review and in the trust literature generally, is that there are many different scholars studying trust from diverse areas (e.g. interpersonal, organizational), with apparently few efforts to begin to integrate this knowledge (Rousseau, Sitkin, Burt and Camerer, 1998). This appears to be changing, as two recent meta-analytic efforts integrate the existing research relevant to understanding the effects of trust within organizational settings (Ferrin and Dirks, 2002), as well as trust in the leader/follower relationship (Dirks, 2002). This work is evidence of increasing internal integration of the knowledge gained by trust researchers and theorists.

In addition to the higher level of integration within trust research, the study of trust has also started to be integrated with the work of other thinkers in related areas of study, and has started to reap the benefits of the cross-fertilization of ideas and concepts from varying domains. A model by Brower, Schoorman and Tan (2000), for example, links trust to the leader-member exchange model.[1] Similarly, other work by Oliver and Montgomery (2001) extends trust to the realm of system cybernetics. This work focuses on trust at both an individual level and at a higher organizational level. Cybernetics is typically used to describe behaviour (such as communication and control processes) within complex systems, based on the idea of social systems as complex feedback systems. Oliver and Montgomery conceptualise trust as a subsystem within a given social system. This subsystem changes over time, and as the result of new information. Moreover, a social system can also have many different subsystems, each of which is compromised of trustor-trustee dyads, with each person being involved in several different dyads. Figure 1 depicts an organizational social system containing multiple nested trust subsystems.

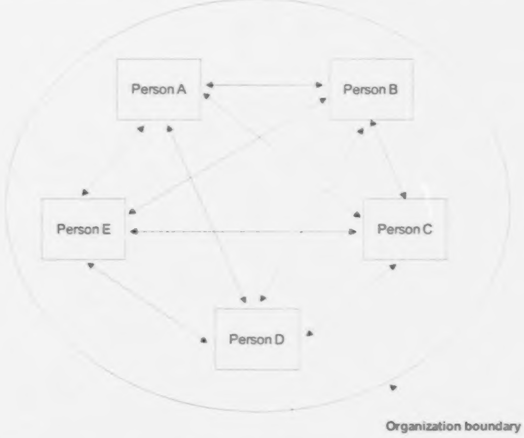

Figure 1. An organizational social system containing multiple nested trust subsystems (Oliver and Montgomery, 2001).

These trust dyads interact at a wider level, such that a broader systemic trust is also created, and influences the development of dyadic trust. This trust may or may not characterize the respective trust subsystems. This conceptualisation of trust explicitly shows the dynamic nature of trust, and the interrelatedness of trust subsystems.

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[1] This model is discussed in detail in the upcoming section related to trust in a leader.

A model that depicts the dynamic equilibrium of trust is also offered (Oliver and Montgomery, 2001). As the model in Figure 2 shows, information relevant to a trustee affects trust to the extent that it either confirms or violates one's own standards for trustworthiness. Information that is congruent with these standards enhance trust; information that is not congruent either erodes trust, requires a reassessment of one's cognitive map, or calls for remedial feedback about the person. As such, the development of trust is compared to a thermostatic process, whereby levels of trust are adjusted upward or downward depending on the adherence of trustee behaviour to one's own standards of trust.

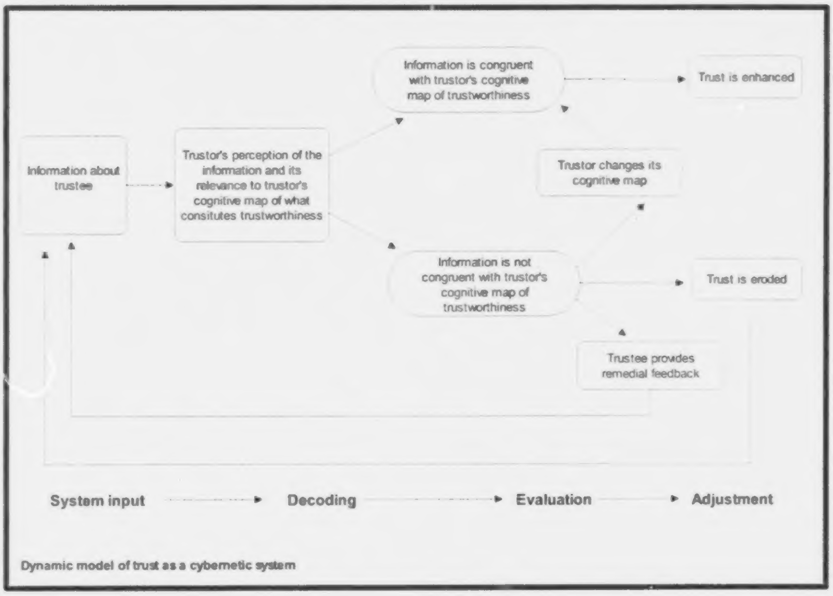
Information is congruent with trustor's cognitive map of trustworthiness
Trust is enhanced
Information about trustee
Trustor's perception of the information and its relevance to trustor's cognitive map of what consitutes trustworthiness
Trustor changes its cognitive map
Information is not congruent with trustor's cognitive map of trustworthiness
Trust is eroded
Trustee provides remedial feedback
System input
Decoding
Evaluation
Adjustment
Dynamic model of trust as a cybernetic system

Figure 2. Dynamic model of trust as a cybernetic system (Oliver and Montgomery, 2001).

The kind of information sought in making judgements about the trustworthiness of other individuals differs from person to person, and over time (Oliver and Montgomery, 2001). The cognitive maps that individuals use to understand others are unique, as individuals place differential importance on attributes of trustworthiness. Moreover, the information that is sought in making judgements of trust during the formation of a new relationship may change substantially from that which is sought by people seeking information in more highly developed relationships. Interestingly, the trust development process described in this work provides support for the notion that individuals begin their judgements at a more category-based than person-based level, as personal information may simply not be available. As the relationship progresses, however, information specific to the individual comes into play. Attributes such as competence and benevolence, for example, are likely to play an increasing role in judgements of trustworthiness.

This model makes several unique contributions to understanding trust. This model argues that whether trust is adjusted or not depends on the comparisons of one's own expectations with the outcome. Of course, trust will only be adversely affected if the negative behaviour of another person is truly unexpected. This model is important because it attempts to characterise the dynamics and complexity of trust, which although recognized in the organizational literature, has not been explicitly depicted in existing models. The visual depiction of the 26 different trust relationships within a 5-person system is a critical reminder of the complexity of trust relationships within teams. This work is also a reminder of the importance of considering the role of organizational context in understanding trust judgements within a small group.

For our purposes, we would argue that the team context represents yet another level of analysis which will need to be considered in order to fully understand trust in small teams. Just as the dyadic relationships depicted in the Oliver and Montgomery model combine to create a more systemic trust within organizations, team relationships simultaneously create (and are created by) the team culture around trust. In short, small teams also create their own trust milieu that is specific to the team within an organizational structure. This milieu will have serious impact on how trust evolves within the team.

As a whole, then, trust theory appears to have progressed, both in terms of its internal integration (as evidenced by meta-analytic efforts on the part of trust researchers), as well being increasingly considered in a broader context. Increasing elaboration of the nature of trust within organizational settings is also evidence that trust theory is progressing at a rapid rate. This broadening of trust to such diverse domains is indicative of trust theory maturing and reaching both a higher level of complexity and application to more diverse areas of study.

2.2 Effects of Trust in Organizational Settings

Unfortunately, there appears to be little work that directly addresses the effects of trust within small teams. There is, however, a developing body of research related to the effects of trust within organizational settings. As small military teams function as a part of an larger organizational structure, recent findings relevant to trust in organizational settings may be relevant to understanding trust in small military teams.

A meta-analysis of work exploring the role of trust in organizational settings has been completed (Dirks and Ferrin, 2001). In the process of completing this review, the authors examined 43 studies that used trust as a main effect model, of which 29 explored behavioural and performance outcomes, and 23 explored attitudinal and cognitive/perceptual outcomes.

This work elaborates on the previously unchallenged assertion that trust impacts directly on performance. According to this account, trust exerts a positive main effect on performance, by creating more positive attitudes, higher levels of cooperation, and generally superior levels of performance. In a continuing body of work, (e.g. Dirks, 2001) a different account of how trust influences performance is offered, whereby trust impacts indirectly by promoting outcomes which then facilitate trust.

The research reviewed suggests that, within organizational settings, there is some empirical evidence that trust impacts directly on the following behavioural and performance processes[2], as indicated in Table 1 below:

Study	**Primary Thesis Related to Trust**	**Sig.**	***r***

---

[2] Note: For all Table 1, Sig = statistically significant finding ($p<.05$); ns = nonsignificant effect; p = positive, significant effect; n= negative, significant effect; na=data not available; info = information. Effect sizes reported as r (Pearson correlation coefficient). Studies that examined several dependent variables are reported in the table multiple times.

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Communication			
Boss 1980	Trust within group has (+) effect on open communication	p	0.37 to 0.59
De Dreu et al. 1998	Trust between negotiators mediates the effects of social motives and punitive capability on info. exchange	ns	0.20
Dirks 1999	Trust within group has (+) effect on info. sharing in group	ns	0.00
Kimmel et al. 1980	Trust between negotiators has (+) effect on info exch. dyad	ns	n/a
Mellinger 1959	Trust has (+) effect on accuracy of info. share with superior	p	n/a
O'Reilly and Roberts 1974	Trust has (+) effect on amount of info sent to superior	p	n/a
O'Reilly 1978	Trust has (+) effect on amount of info sent to superior	p	0.32 to 0.48
Roberts and O'Reilly 1974	Trust has (+) effect on amount of info sent to superior	ns	n/a
Smith and Barclay 1985	Trust has (+) effect on openness in communication in interorganizational relationship	p	0.47
Zand 1972	Trust has (+) effect on openness in communication in group	p	0.41 to 0.63
Organizational Citizenship Behaviour			
Deluga	Trust building by leader has (+) effect on organizational citizenship behavior (OCB)	ns	n/a
Konovsky and Pugh 1994	Trust in superior mediates the relationship between justice and organizational citizenship behavior	p	0.28
McAllister 1995	Trust in co-worker has (+) effect on OCB	p	0.19, 0.48
Pillai et al. 1999	Trust in leader mediates the relationship between leader behavior and organizational citizenship behavior	p	0.08, 0.31
Podaskoff et al. 1990	Trust in leader mediates the relationship between leader behavior and organizational citizenship behavior	p	0.15 to 0.30
Robinson 1996	Trust in organization has (+) effect on organizational citizenship behavior	p	0.32
Negotiation Processes			
Kimmel et al. 1980	Trust between negotiators has (-) effect on distributive beh.	ns	n/a
Schurr and Ozanne 1985	Trust between negotiation partners has (+) effect on integrative behavior and (-) effect on distributive behavior	ns	0.00 to 0.02

Study	Primary Thesis Related to Trust	Sig.	*r*
Conflict			
De Reu et al. 1998	Trust between negotiators has (-) effect on conflict	n	-0.53
Porter and Lilly 1996	Trust within group has (-) effect on conflict in team	n	-0.46
Zaheer et al. 1997	Trust has (-) effect on conflict between partners in interorganizational relationship	ns	-0.13 to –0.25
Other Behaviors			
Dirks 1999	Trust within group has (+) effect on effort expended	ns	0.21
Spreitzer and Mishra 1999	Trust in employees by management has (+) effect on involvement of employees in decision making	p	0.62
Robinson 1996	Trust in organization mediates relationship between psychological contract violation and intent to team with employer	p	0.37
Tsai and Ghoshal 1998	Trust has (+) effect on resource exchange between units	p	0.90
Individual Performance			
Earley 1986	Trust in supervisor mediates relationship between praise/criticism and job performance	p	0.43
Oldham 1975	Trust in leader has (+) effect on task performance	ns/p	0.12 to 0.28
Rich 1997	Trust in manager has (+) effect on sales performance	p	0.30
Robinson 1996	Trust in organization mediates relationship between psychologist contract violation and job performance	p	0.41
Unit Performance			
Davis et al. 2000	Trust in general manager has (+) effect on business unit performance	p	n/a
Dirks 1999	Trust within group has (+) effect on group performance	ns	-0.21 to 0.20
Dirks 2000	Trust in leader has (+) effect on group performance	p	0.57
Friedlander 1970	Trust within group has (+) effect on group performance	ns	n/a
Kegan and Rubenstein	Trust within group has (+) effect on group performance	n/ns	-0.31 to 0.30
Kimmel et al. 1980	Trust between negotiators has (+) effect on dyad	ns	n/a
Kilmoski and Karol 1976	Trust in partners has (+) effect on group performance	p	n/a
Schurr and Ozanne	Trust between negotiators has (+) effect on dyad	ns/p	0.16 to 0.23
Zaheer et al. 1997	Trust has (+) effect on interorganizational relationship performance	ns	0.26 to 0.39

Table 1. Research examining main effects of trust on workplace behaviours and outcomes (Dirks and Ferrin, 2001).

In general, this review showed somewhat weak support in existing trust research for the assertion that trust has a main effect on behavioural and performance outcomes in organizations. Although there are several studies in support of the relationship between trust and communication (e.g. sharing of information), for example, there are 4 studies that did not show trust to impact on communication. Two studies do not support a hypothesized relationship between trust and negotiation, and more studies failed to find a relationship between trust and unit performance than found a significant relationship.

In general, however, when effects are significant, and when effect sizes can be estimated, they are modest. The strongest empirical support was evidenced for the relationship between organizational citizenship behaviours and individual performance.

On the other hand, there was better support for the main effects of attitudes, and cognitive/perceptual constructs on trust within organizations, as evidenced in Table 2 below:

Study	Primary Thesis Related to Trust	Sig.	*r*
Perceived Accuracy of Information			
Benton et al. 1969	Trust in partner has (+) effect on perceived accuracy of info.	p	0.34
Roberts and O'Reilly 1974	Trust in leader has (+) effect on perceived accuracy of info.	p	0.26 to 0.50
Acceptance of Decision/Goal			
Fulk et al. 1985	Trust in supervisor has (+) effect on fairness/accuracy of performance appraisal	p	0.47
Kim and Mauborgne 1993	Trust in management has (+) effect on decis'n compliance	p	0.58
Satisfaction			
Boss 1978	Trust has (+) effect on sat. with meeting	p	0.65
Brockner et al. 1997	Trust has (+) effect on sat./support for leader; relationship moderated by outcome favorability	p	0.65
Driscoll 1978	Trust has (+) effect on job sat.	p	0.52
Muchinsky 1977	Trust has (+) effect on job sat.	p	0.40
O'Reilly and Roberts 1974	Trust has (+) effect on sat. with communication	p	0.29
Pillai et al. 1999	Trust in leader mediates the relationship between leader behavior and job sat.	p	0.13, 0.32
Rich 1997	Trust has (+) effect on job sat.	p	0.43
Roberts and O'Reilly 1974	Trust has (+) effect on sat. with communication	p	0.39 to 0.43
Schurr and Ozanne 1985	Trust has (+) effect on sat. with partner	p	0.53
Smith and Barclay 1997	Trust has (+) effect on sat. with IRP	p	0.42
Ward 1997	Trust has (+) effect on sat. with work group	p	0.58
Zand 1972	Trust has (+) effect on sat. with meeting	p	0.63
Other Attitudes			
Brockner et al. 1997	Trust has (+) effect on commitment; relationship moderated by outcome favorability	ns/p	0.05, 0.41
Friedman 1993	Trust in negotiator has (+) effect on preference for integrative bargaining	p	n/a
Pillai et al. 1999	Trust in leader mediates the relationship between leader behavior and commitment	p	0.35, 0.42

Table 2. Research examining main effects of trust on workplace attitudes and cognitive variables (Dirks and Ferrin, 2001)

As Table 2 suggests, although there are a relatively low number of studies addressing the relationship between trust and attitudes/cognitive variables, these studies evidence fairly consistent support for a strong relationship. Trust has been shown in 12 different studies to impact on measures of satisfaction, including for example, job satisfaction and satisfaction with one's work group. There is also consistent support that when trust is in place, the perceived accuracy of information is also seen to be higher. There is some evidence that trust aids in the acceptance of decisions, as well as being positively associated with an assortment of other variables (e.g. perceptions of procedural justice and organizational climate).

In addition, there is also some evidence that trust is a moderator of performance and attitudes rather than directly affecting them. As Table 3 shows, the body of research in which trust has been conceptualised as a moderator of performance is much less than that in which trust is depicted as a main effect, with only 9 studies examining trust as a moderator.

Study	Primary Thesis Related to Trust	Sig.
Benton et al. 1969	Trust in partner moderates the relationship between partner's past behaviour and individual doubt of partner	s
Dirks 1999	Trust within group moderates the relationship between motivation and group process and performance	s
Kimmel et al. 1980	Trust in partner moderates the relationship between aspiration level and negotiation outcomes	ns/s
O'Reilly and Anderson 1980	Trust in supervisor moderates relationship between performance appraisal feedback and individual performance	ns/s
Read 1962	Trust in supervisor moderates the relationship between mobility aspiration and information sharing	s
Robinson 1996	Prior trust in supervisor moderates the relationship between unfulfilled promise and subsequent trust	s
Rousseau and Tijoriwala 1999	Trust in management moderates the relationship between perceived reason for organization change and perceive legitimacy of change	ns/s
Schurr and Ozanne 1985	Trust in partner moderates the relationship between bargaining toughness and negotiation processes and outcomes	s
Simons and Peterson 2000	Trust within group moderates the relationship between task conflict and relationship conflict	s

Note. Sig = Statistically significant finding ($p<0.05$); ns = nonsignificant effect; s = significant effect.

Table 3: Research Examining Trust as a Moderator (Dirks and Ferrin, 2001)

As a moderator, trust is seen to have two primary moderator influences (Dirks and Ferrin, 2001). First, trust is hypothesized to moderate the relationship between motivational constructs and workplace behaviours/outcomes. According to this argument, trust does not affect performance directly, but influences the relationship between behavioural cues and actual behaviour. Trust may influence one's motivation to engage in certain behaviours, such as defensive monitoring in order to avoid being betrayed. Defensive monitoring, in turn, may lessen the efficiency or accuracy of performance. There is some empirical evidence from 3 studies that support this interpretation, including Dirks (1999), which suggests that trust does influence group performance, but indirectly, by channelling where group members placed their energy. In short, there is some evidence that trust impacts on how one assesses the future behaviour of another person.

Secondly, trust is also argued to moderate the relationship between a partner's action and a trustor's response. According to this proposition, trust affects how one interprets the past or present actions of other person. This argument is based on attribution theory. As many behaviours are, by their nature, somewhat ambiguous, the "poetic licence" that individuals have in interpreting the behaviour of others will be greatly affected by their trust in the individual. A good example of trust as a moderator is seen in work by Simons and Peterson (2000). This study found that when trust was low in a work group, task conflict was interpreted as indicative of relationship conflict. When trust was high within a work group, however, task conflict was interpreted as task conflict, rather than as relationship conflict. In essence, trust appeared to have structured the meaning of conflict within this setting. Again, although only a few studies have explored the hypothesis that trust influences performance indirectly, this research provides some evidence that attribution processes do change with varying levels of trust.

As a whole, these studies suggest fairly good support for the notion that trust moderates the relationship between specific constructs (e.g. between task conflict and relationship conflict). Empirical evidence supports the assertion that trust impacts on performance by influencing both the way that people channel their energies, and how they interpret the behaviour of others. The effects of trust as a moderator are still somewhat inconsistent, with 3 of the 9 studies showing somewhat mixed results.

As a whole, then, empirical evidence supports the assertion that trust impacts both directly and indirectly on performance and outcomes. How, then, do we understand the relationship between trust and performance? Dirks and Ferrin (2001) argue that these two different conceptualizations of how trust impacts on performance may be equally valid, but be applicable to different kinds of settings. More specifically, the notion of "situational strength" is argued to influence whether trust impacts directly or indirectly on outcomes. Social psychological theory argues that situations can vary in terms of the strength with which they impact on behaviour, and can be described as either "weak" or "strong" (e.g., Mischel, 1977). In weak situations, few clues are inherent in the situation to mandate a particular interpretational strategy. In such situations, Dirks and Ferrin (2002) argue that trust will impact on performance directly, as fewer factors will influence the relationship between trust and performance. In stronger situations, on the other hand, cues within the situation can provide considerable guidance about how a situation should be interpreted. In very strong situations, however, outcomes may be "overdetermined", leaving little or no room for trust to exert an impact on performance. Only in more moderate strength situations (where there are more degrees of freedom) is trust likely to exert an indirect impact on performance. The implication of this is that understanding whether trust impacts directly or indirectly on performance may require a situational analysis, in order to understand the "strength" of the situation, and the ability for trust to be enacted within a given situation. This suggests that it may be unwise to attempt to understand the effects of trust on performance as being solely direct or indirect across all situations. A more complex depiction of the relationship between trust and the context in which judgements about trust are made will be important to consider in future work and theory.

As informative as it is, however, this work addresses trust within organizational settings, rather than trust within small teams per se. It is not completely clear that the results in one domain will necessarily generalize to another, although some carryover from the organizational level to the level of small teams is likely, at least for some of the variables.

Further, as a result of these analyses, it is possible to go further. Dirks (2002) argues, and to begin to understand the importance of trust and its impact on work outcomes, relative to other variables. In discussing organizational research addressing job satisfaction, organizational and occupational commitment, job involvement and procedural justice, Dirks argues that the effect size evidenced for trust (between .2 and .3) suggest it is on equal footing in importance with some of these better known constructs. This provides support for the notion that trust is at least moderately important within organisational settings.

2.3 Developments in Understanding Trust in Leaders

Another indication of an increasing level of maturity of trust theory and research is an increasing integration of the literature relating to leadership with the trust literature. A good example of this is in the work of Brower, Schoorman and Tan (2000), which links theories of leader-member exchange with the trust literature. More specifically, this paper argues that theories of leader-member exchange focus more on the unique dyadic relationship between a leader and follower, rather than focusing on the qualities of a leader (as do many other leadership theories), or assuming that the leader-follower relationship is the same in all cases. Moreover, this focus on the dyadic relationship also meshes well with consideration of how trust impacts on the leader/follower relationship.

The model by Brower, Schoorman, and Tan (2000), presented in Figure 3, offers a relational view of the trust between a leader and a follower, and is based on the leader-member exchange (LMX) model. In terms of antecedents of leader-member exchange relationships and trust, this work also argues that many of the same antecedents influence both. The LMX literature, for example, talks about similarity, delegation, ability, performance, liking/affect, loyalty etc. Trust theory also suggests that perceived similarity is a factor in trusting others. Further, both competence and benevolence are also seen to be critical in both domains. In terms of the consequences of relational leaders, this work also presents the hypothesis that a leaders' assessment of the trustworthiness will determine the level of risk taking (e.g. delegation of tasks) in a subordinate. In terms of actual outcomes, LMX has often focused on studying satisfaction with supervisor, turnover, performance, commitment and citizenship behaviours. They argue that it is likely that work on a model of relational leadership would also show trust as the key motivational force. The first part of this model focuses on a leaders' trust for a follower, and argues that for a leader, trust in a subordinate is a product of the attributes of ability, benevolence and integrity. Mostly importantly, for our purposes, this model depicts the trust dynamic as relational at its core, as the extent to which a subordinate sees herself to be trusted by the leader impacts directly on the subordinate's satisfaction, commitment and citizenship behaviours. Each of these factors, in turn, leads back to influence the subordinate's actual ability, benevolence, and integrity.

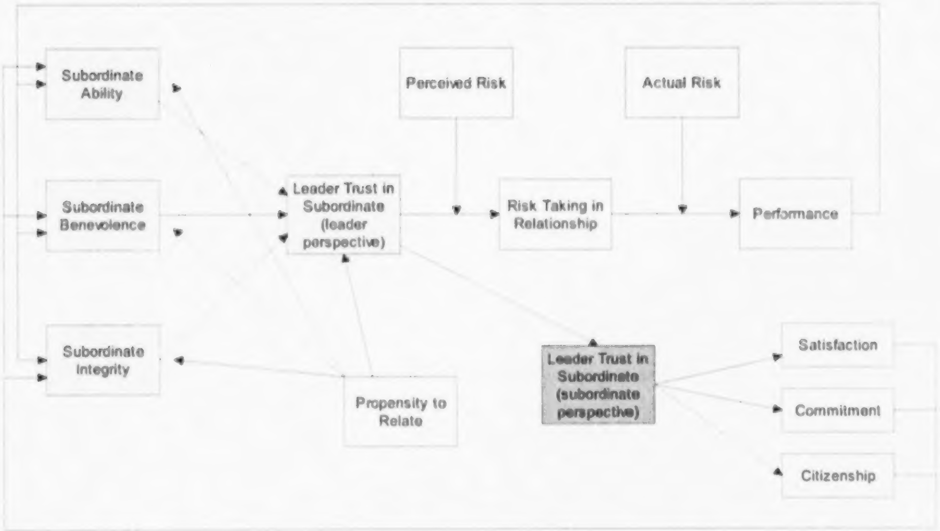
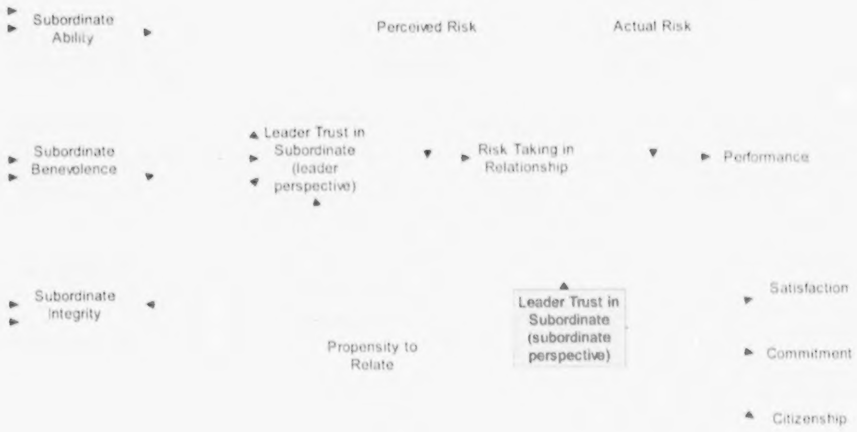

Subordinate Ability
Perceived Risk
Actual Risk
Subordinate Benevolence
Leader Trust in Subordinate (leader perspective)
Risk Taking in Relationship
Performance
Subordinate Integrity
Propensity to Relate
Leader Trust in Subordinate (subordinate perspective)
Satisfaction
Commitment
Citizenship

Figure 3. Relational model of trust (Brower et al., 2000)

Brower et al. (2000) also argue that leaders engage in testing in order to develop their impressions of subordinates, by delegating tasks. This testing both develops the relationship (in terms of leader-member exchange) as well as building trust. This model also argues that the very propensity to engage stems from the leader's stable inclination to relate to others. This propensity, of course, is called propensity to trust in the trust literature.

This work makes a number of contributions to the trust literature. First, this model draws a distinction between perceived risk and actual risk. This model also argues that whereas perceived risk moderates the relationship between leader trust and risk taking in the relationship with the subordinate, actual risk moderates the relationship between risk taking and the impact of trust on performance. Moreover, this model is the first that specifically illustrates trust as a relational rather than uni-dimensional process, as a dynamic and interrelated trust system. A leader's trust in a subordinate actually influences the development of the subordinate's trust in the leader, as well as in the subordinate's very skills. Although it is clear in existing trust theory that trust is relational, earlier trust models failed to depict this relational nature as a core feature of trust models. More generally, this work shows that there is considerable overlap at a conceptual level between leader-member exchange and theories of trust, and using a combination of these two theoretical stances will be important for future work.

Empirical work has also started to explore the relationship between leadership styles and trust. Work by Jung and Avolio (2000) examines the relationship between leadership style on follower performance, as mediated by trust and value congruence. In essence, this work argues that transformational leadership is built on the relationship between a leader and a follower, and that by building a trust relationship, transformational leaders enhance the emotional involvement, identification, and the very performance of their followers. As such, transformational leadership is hypothesized to have a positive effect on followers' trust, value congruence and performance. Transactional leaders, on the other hand, function more in an exchange relationship. Although their interactions with followers may improve performance, trust and shared values are not an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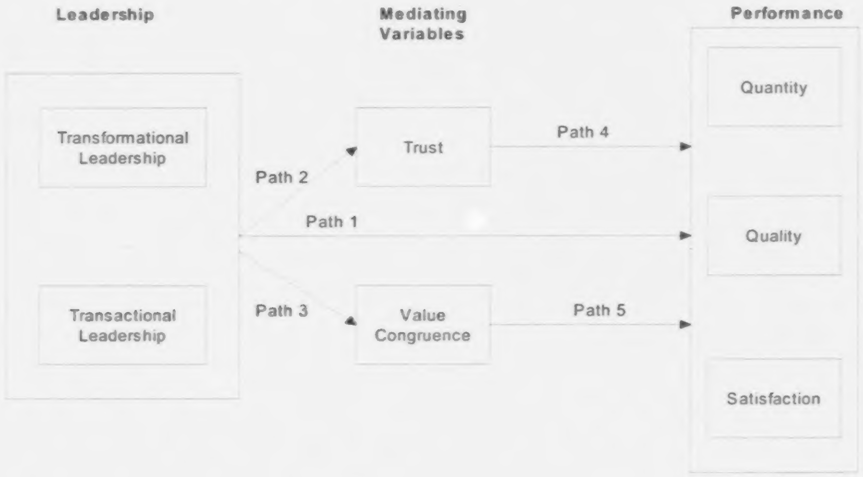


Figure 4. Direct and indirect effects of leadership on performance and mediating variables (Jung and Avolio, 2000)

Students (n = 194) from business courses at a public university in the U.S. participated in this research. Participants were involved as a group in 2-hour sessions chaired by a confederate leader trained to exhibit either transformational or transactional verbal and non-verbal behaviours. Participants were told that the sessions were designed to solicit their recommendations for promoting quality education. Measures included:

- Multi-factor Leadership Questionnaire (MLQ)
- Trust in the leader - using 3 items adapted from Podsakoff (1990) including "I feel quite confident that my leader will always try to treat me fairly"
- Value congruence – items adapted from Posner (1992) including "I really support the intent of the core values of my leader"
- Objective performance – quality and quantity of recommendations
- Satisfaction with the leader – 4 items including "I am very satisfied with my leader"

Path analysis was used to test several different models, to see whether models specifying direct or indirect effects of leadership on performance provided the best fit. Results testing the full model (all paths active) were somewhat mixed. As expected, transformational leadership did impact strongly on the quality of ideas and satisfaction with the leader, but negatively on the quantity of ideas. Moreover, transformational leadership also had positive effects on both followers' trust and value congruence. Unexpectedly, transactional leadership had no impact on performance, but did impact significantly on followers' trust and to a lesser degree on value congruence.

Several analyses were also conducted to test the mediating models of transformational and transactional leadership. These analyses showed that transformational leadership did have both a direct and an indirect effect on performance, and that the indirect effect was mediated through trust and value congruence. Transactional leadership also impacted on trust and value congruence, but the relationship with performance was more indirect than direct. As the authors note, however, some features of the experimental task (e.g. ambiguity of the task, combined with short duration of task) may have necessitated trust in the leader, independent of leadership style. Nonetheless, this work suggests that the relationship between both styles and performance is consistently mediated by trust in this work, but the assertion that particular leadership styles are more likely to elicit trust is in need for further empirical exploration.

There is also some evidence that trust in a leader impacts at a broader level of group/team/organizational performance. Work by Dirks (2000) challenges the prominent assumption that high levels of trust in a team leader will directly result in better team performance, and argues that trust in a leader impacts indirectly on team performance.

This study was conducted in NCAA basketball. The winning percentage of the 30 teams in the previous year was collected, and teams were followed for an entire season. At the beginning of the year, trust in the coach and trust in the team as well as several other potential control factors were measured (e.g. team talent, coach's career record and experience etc.). Regression analyses were conducted to test for the hypothesized role of trust in the coach as a mediator between past and future performance.

Results showed that trust in the coach was a significant mediator between past performance and future performance. Past performance, as mediated by trust in the team leader accounted for 7% of the variance in future performance. In short, Dirks (2000) argues that trust in a leader is both a product and a determinant of team performance.

It is important to note, though, that although trust in a leader did mediate the relationship between past performance and future performance, trust within a team did not. This is antithetical to what might be expected. Dirks argues that the situation should have allowed for both trust in leader and trust in team to play a role, but that this lack of role for trust in team may be due to the nature of the task. Some tasks may be more conducive to allowing both forms of trust to impact. We would argue that the apparent unimportance of trust in a team within this research may also be related to the high correlation between trust in a leader and trust in a team. With a correlation of $r = .57$, $p<.05$, it may be difficult for trust in a team to account for a unique amount of the variance on its own. This does not necessarily mean that team trust is not important, simply that it overlaps substantially with trust in a leader. This issue requires more empirical investigation.

As a whole, this work suggests that the future performance of a team is directly affected by trust in a leader, which is directly affected by past performance. Exactly how does trust in a leader result in improved performance? As indicated in the quote below, Dirks (2000) suggests that there are two main effects of trust in a leader.

> *"trust in leadership allows team members to suspend their questions, doubts, and personal motives and instead throw themselves into working toward team goals." (Dirks, 2000).*

First, trust facilitates performance by reducing many of the distractions that diminish performance. Secondly, trust in a leader motivates followers to assume a common goal to work toward. This account is supported by followers' own descriptions of why trust in leader matters:

> *"In order to pull the wagon, all the horses have to be pulling in the same direction and cadence. Trust helps with that"*

> *"once we developed trust in Coach X, the progress we made increased tremendously because we were no longer asking questions or were apprehensive. Instead, we were buying in and believing that if we worked our hardest, we were going to get there."*

This account of the impact of trust in a leader is in keeping with the argument that trust allows team members, in part, to conserve resources. It is unclear, however, whether the mere lessening of demands facilitates performance because it frees up resources, or whether the suspension of such doubts motivates people to work toward team goals. As such, it is unclear whether the account given is a cognitive or a motivational one. It would appear that both factors are seen as important.

This study has a number of implications. First, it suggests that trust in a leader is both a factor in team performance, as well as a result of team performance. Secondly, this work argues that trust (or lack of trust) in a leader is cyclical. For teams in which trust in a leader is low, diminished performance may well affect the team's trust in a leader, which continues to exert impact on the team's performance. In essence, teams who do not trust their leaders are in double jeopardy, and it may be very difficult to escape from this. This work is also important because of its finding that although trust in a leader influenced performance, trust within a team did not. To its credit, this line of research seeks an answer as to why trust improves performance, rather than merely whether trust improves performance.

This work also has a number of limitations that should be noted. First, the effects evidenced within it are somewhat small with trust in a leader accounting for only 7% of the variance in future performance. On the other hand, uniquely accounting for 7% of the variance in future performance is still very admirable, as many other factors have the power to exert impact in an uncontrolled setting. The extent to which this work is applicable to the domain of small military teams is not clear. Nonetheless, in the absence of other more directly relevant work, it is important to consider the findings of this work.

Empirical work within the military also addresses the importance of confidence in a leader[3] (Murphy and Farley, 2000). This work, conducted within the Human Dimension of Operations program includes confidence in the leader as one of the key aspects of unit climate. The original measurement scale arising from this work, the Unit Climate Profile (UCP-56) incorporates 8 dimensions, including:

- Morale/cohesion (1 items)
- Professionalism (6 items)
- Ideology (6 items)
- Leadership skills (12 items)
- Confidence in leadership scales (originally addressing 4 organizational levels, including Section commander, Platoon warrant officer, Platoon commander, and Company commander).

Sample items on the confidence subscale include:

- My Section Commander is respected by section members.

---

[3] It should be noted that this work refers to what we call trust as confidence in a leader. At a conceptual level, however, we find no difference between what they call confidence and what we call trust.

- My Platoon Warrant Officer stands up for the troops.
- In the event of combat, I have confidence in my Platoon Commander.
- My Company Commander is respected by those in the company.

Although trust in the leader was initially measured at 4 different levels of leaders, subsequent efforts combined these dimensions into a single subscale of the Unit Climate Profile.

The UCP (with the confidence subscales) was pilot tested with an infantry company. Unfortunately, no information about the characteristics of this company, or about the tenure of the company was provided. Early phases of this project tracked trust in leader at the pre-deployment stage, as well as at several other points during an operation. The scale was completed prior to deployment (48 hours before), and late in deployment (after 5 months in theatre). The rating scale ranged from strongly agree (+2) to strongly disagree (-2), with a neutral midpoint.

Initial results (presented in Figure 5) showed that leaders at different levels of the hierarchy (e.g. Section commander vs. Platoon commander) were seen to be differentially trustworthy, and that trust varied from the predeployment to subsequent phases of operations for some of the leaders.

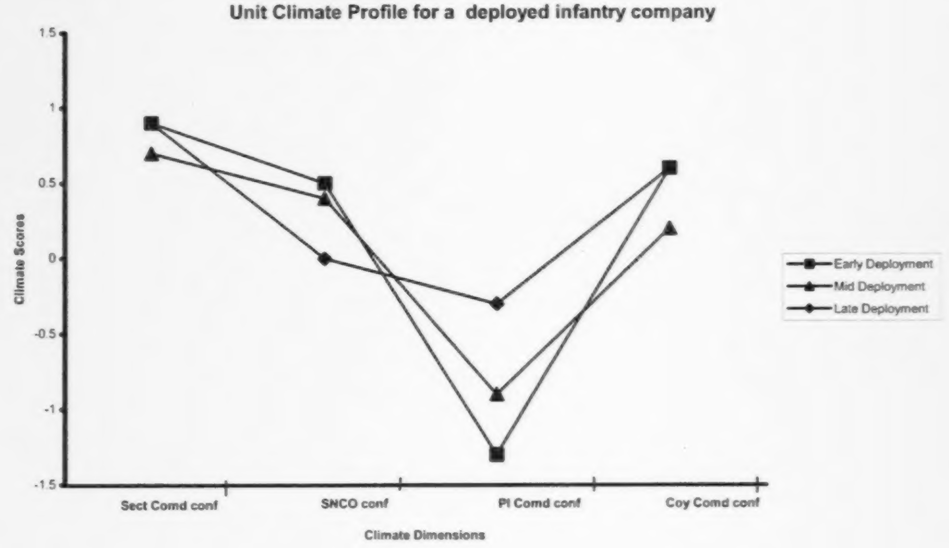


Figure 5. Confidence Subscales only for deployed infantry company (Murphy and Farley, 2000)

More specifically, for the section commander, trust was high at both early and late deployment, but somewhat less at mid-deployment. For the senior NCO, trust was very high at early and mid deployment, lessening somewhat late in deployment. For the platoon commander, on the other hand, trust was relatively low overall compared to the other leaders, but grew from a very low level at predeployment to a more neutral level at late deployment. For the company commander, trust was highest at late deployment. With only one sample, it is difficult to know whether these changes in trust are a product of perceptions of individual leaders shifting during operations, or whether contextual factors played a role in how trust in one's leader changed. What is clear is that trust in leaders varied considerably depending on the specific leader, and that trust did show substantive change over the course of time for the different leaders.

Additional work was done on developing the scale using much larger contingents. No details were provided as to the characteristics of these contingents for ethical reasons. Nonetheless, all contingents had served on peacekeeping operations, with one in Haiti, and one in Bosnia. Results on the trust subscale (presented in Figure 6) showed that trust in leaders grew somewhat during the mission until the post-deployment measure, where trust was significantly less.

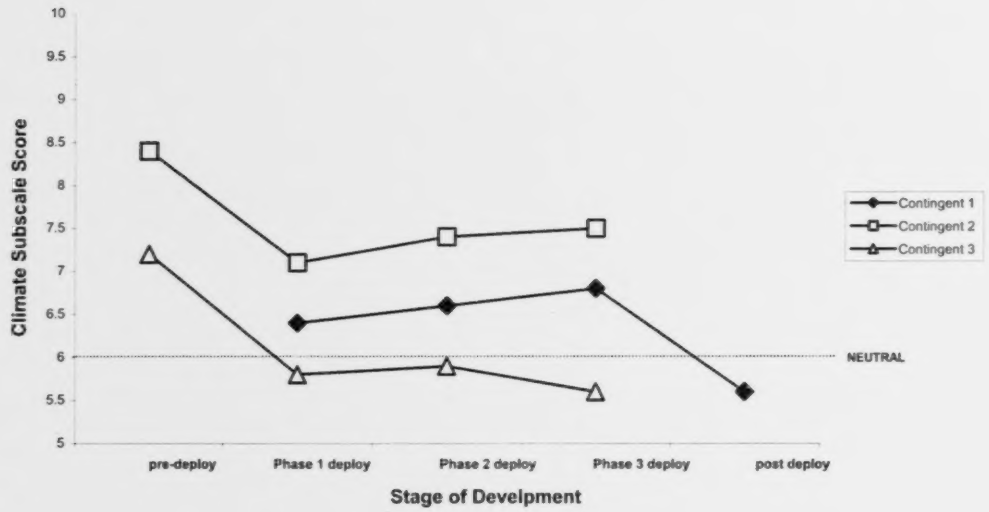


Figure 6. Confidence in Leadership subscale scores for all contingents (Murphy and Farley, 2000)

This pattern is interesting from a number of different perspectives. First, it suggests that contingents that are highly similar in some ways will show different levels of trust for their leaders. Moreover, the Unit Climate Profile appears to be able to capture subtle changes in trust over time. The high trust at predeployment is somewhat surprising, but difficult to interpret without having information about the length of relationship and/or previous experience between leaders and followers. The fact that trust grew during the course of operations is somewhat encouraging, although the low status of trust at post-deployment is obviously likely to be problematic. Nonetheless, the variation of trust, both within contingents and over time is worthy of more detailed empirical exploration.

It would have been interesting to compare the qualities of specific leaders within each of these units, as well as the contextual factors that might have influenced trust. In this sense, the decision to change the conceptualisation of the scale to be a measure of trust in leaders at all vertical levels is perhaps an unfortunate one, as the ability to understand the differential impact of trust in a direct leader, and trust in a more distant leader is lost. In our view, the issue of the actual referent in considering how trust develops should not be ignored.

Nonetheless, this work does clearly show variation in trust over time with the closest possible correlate (i.e. military units) to the current program of research. More detailed measures of trust, with specific referents as well as identification of contextual factors that influence trust will hopefully be even more informative. As the work of Murphy and Farley (2000) suggests, understanding the role of trust within these teams, and the possible role of trust as a stress moderator will likely be critical as this research program develops. In the long term, having the ability to measure trust throughout a mission may provide valuable information relevant to the coping and post mission adjustment periods, and possibly to the very performance of the mission.

It is also important to note that a replication of this work (Dobreva-Martinova, 2001) also showed that the Unit Climate Profile showed itself to be relatively consistent across deployments, and that the climate profiles were also consistent for enlisted vs. commissioned personnel. Positive leadership practices were shown to be most important factor related to cohesion and morale within units, regardless of phase of deployment. Several other findings are particularly germane to the issue of trust in teams. First, it should be noted that there was considerably more variation in confidence in leadership, across both ranks and over the course of deployments than was evidenced for other factors (e.g. morale). This can be understood both in terms of systemic, organizational factors, and in terms of differences in confidence toward individual leaders. Again, this suggests that assessing trust attitudes toward leadership in general, rather than assessing trust in specific individuals may be somewhat problematic.

To this point, the articles reviewed have each considered trust in leadership from a unique perspective. The first meta-analysis of the research specifically addressing trust in leaders has also been conducted. This review considers trust in a leader from several perspectives, and explores the antecedents, correlates, and effects of trust in a leader (Dirks and Ferrin, 2002).

Dirks and Ferrin (2002) argue that trust in a leader has typically been characterized from two qualitatively different theoretical perspectives. The relationship-based perspective is argued to be most consistent with transformational leadership. From the perspective of transformational leadership, leaders promote trust by forming good relationships with followers, and by showing care and concern for them. Similarly, from a relationship-based perspective, trust between a leader and follower conforms to a more complex exchange process, and involves higher quality relationships imbued with care, concern and goodwill. Further, Dirks and Ferrin (2002) argue that a relationship-based process is more in keeping with affective trust.

The character-based perspective, on the other hand, is more closely related to transactional leadership. Transactional leaders put more emphasis on showing good character, rather than on developing personal relationships. Rather than focusing on the relationship between a leader and a follower, the character-based perspective focuses on the follower's beliefs and expectations with respect to the leader. A character-based perspective is more in keeping with cognitive trust.

Trust can be seen as impacting on either behavioural and performance outcomes, or on attitudinal variables, in two different ways (Dirks, 2000). From the relationship-based perspective, trust is argued to improve performance because a good relationship with a leader makes a follower more likely to go "above and beyond" in performing their job. This impact on performance, then, stems from social exchange principles – followers are willing to reciprocate because they have a good relationship with a leader, rather than feeling intimidated by a leader's power.

From the character-based perspective, as leaders have a good deal of power over subordinates, the extent to which a leader is seen to have good qualities (e.g. competence, benevolence) will influence the likelihood of engaging in trusting behaviour (e.g. a risk taking behaviour, such as communicating sensitive information) toward the leader. Similarly, believing that a leader does not have integrity, for example, may necessitate defensive behaviours (e.g. "covering one's back") that detract from work performance. As such, Dirks argues that relationship-based perspective as well as the character-based perspective both impact on performance through complementary (but not completely overlapping) routes.

In order to explore these ideas, research relevant to trust in a leader was analysed. This meta-analysis focused on trust only as a psychological state, and studies relating solely to trust as a behaviour were excluded. Only objective (as opposed to self-report) measures of trust in leader were used in this meta-analysis. The conceptualisation of trust used in this analysis distinguished between cognitive trust, affective trust, willingness to be vulnerable, and overall trust. All of the items in the scales used in these studies were coded in terms of the kind of trust that they addressed (e.g., cognitive, affective etc.), and common meta-analytic procedures were used to understand this data. Empirical findings were also categorized in terms of whether they addressed "direct leader" (a leader with whom direct and personal contact occurred) or "organizational leader" (a leader at a higher organizational level). In all, 106 independent samples of data, with 27,103 individuals were included in the meta-analysis.

Antecedents of Trust in Leaders

Several factors in the literature hypothesized to influence trust in a leader were classified into three categories, including actions and/or practices, attributes of the follower, and attributes of the leader/follower relationship. Dimensions relevant within each of these categories are noted in Table 4 below.

Antecedents of Trust	
Leader actions and/or practices	Transformational leadership Transactional leadership Perceived organizational support Interactional justice Distributive justice Procedural justice Participative decision making (PDM)
Attributes of the follower	Propensity to trust
Attributes of the leader/follower relationship	Length of the relationship Unmet expectations

Table 4. Antecedents of trust (Dirks and Ferrin, 2002).

Research relevant to each of these categories formed one part of the meta-analysis. As Table 5 suggests, all of the proposed antecedents were significantly related to trust in a leader. These include leader actions/and or practices, propensity to trust and aspects of the interaction between leaders and followers.

Antecedents of Trust	K	N	R	95% CI	RC	Q
Transformational leadership	13	5657	.72	.71 to .73	.79	579.6**
Transactional leadership	9	3624	.59	.57 to .61	.67	214.1**
Distributive justice	15	3562	.50	.48 to .52	.58	107.3**
Procedural justice	30	5972	.61	.59 to .62	.68	323.5**
Interactional justice	9	2161	.65	.62 to .67	.71	288.9**
PDM	7	1273	.46	.42 to .50	.52	98.5**
Perceived org. support	6	847	.69	.66 to .72	.76	36.0**
Propensity to trust	7	1113	.16	.10 to .22	.21	3.0**
Length of relationship	5	1255	-.01	-.06 to .04	-.01	1.6**
Unmet expectations (breach)	5	1391	-.40	-.36 to -.44	-.43	26.0**

Notes: K = number of samples, N=total number of individuals in samples, r=mean attenuated correlation, CI = confidence interval, RC=estimate of mean weighted correlation corrected for attenuation, Q=chi-square test for homogeneity of effect sizes *p<.05, ** p<.01.

Table 5. Results of primary meta-analysis: Hypothesized antecedents of trust in leadership (Dirks and Ferrin, 2002)

In general, however, transformational leadership and perceived organizational support are the constructs most highly related to trust in a leader (RC= .79 and .76 respectively). Transactional leadership is related to judgements of trust, but not as strongly as is transformational leadership. The extent to which a leader is seen as promoting participative decision making rather than authoritarian decision making is also significantly related to trust in the leader. Issues of justice were also predictive of trust in a leader, suggesting that the leader's fairness plays a role in trust expectations.

In terms of factors related to the trustee, a follower's propensity to trust, as well as the length of the leader/follower relationship were both significantly related to trust in a leader. Despite its statistical significance due to large sample size, however, it should be noted that the relationship between length of the relationship and trust in a leader is very close to zero.

Lastly, unmet expectations between a leader and a follower were significantly negatively correlated with trust in a leader (RC = -.43), providing support for the depiction of trust as a historical process that evolves as the result of a leader meeting the expectations of followers.

This meta-analysis, then, suggests that there is good empirical evidence that styles of leadership, perceptions of leader fairness, characteristics of the trustee, and meeting expectations all influence the level of trust between a leader and follower.

Correlates of Trust in a Leader

Two correlates of trust in a leader, satisfaction with the leader and leader-member exchange, are also evident in the trust literature. In fact, as Table 6 suggests, there is some evidence that satisfaction with the leader and leader-member exchange are very highly correlated with trust in a leader.

Correlates	K	N	R	95% CI	RC	Q
Satisfaction with leader	13	3302	.73	.71 to .74	.85	230.8**
LMX	8	1183	.69	.66 to .71	.77	142.1**

Table 6. Results of primary meta-analysis: Hypothesized correlates of trust in leader (Dirks and Ferrin, 2002)

Effects of Trust in Leaders

As Table 7 shows, trust in leadership has a significant relationship with all of the proposed work outcomes and behaviours. Trust in leadership is correlated with both job performance, (note that this correlation is particularly small, r = .17), and with several aspects of organizational citizenship behaviour (OCB), where correlations range from .13 to .25.

In terms of attitudinal variables, trust in a leader is frequently seen as decreasing intentions to quit, as promoting job satisfaction, and organizational commitment, but as not related to belief in information and decision commitment.

Work Outcomes	K	N	R	95% CI	R	Q
Job performance	21	5686	.16	.13 to .18	.17	101.2**
OCB - altruism	12	3923	.19	.16 to .22	.22	44.8**
OCB – civic virtue	9	3971	.11	.07 to .14	.13	32.1**
OCB - conscientiousness	6	2624	.22	.18 to .26	.25	33.2**
OCB - courtesy	7	3311	.22	.19 to .25	.25	27.4**
OCB - sportsmanship	9	3971	.20	.17 to .23	.23	32.8**
Attitudinal Variables	**K**	**N**	**R**	**95% CI**	**R**	**Q**
Intent to quit	17	3297	-.40	-.37 to -.43	-.47	75.2**
Organizational commitment	40	9676	.49	.48 to .51	.59	344.5**
Job satisfaction	34	10631	.51	.50 to .52	.65	469.3**
Belief in information	7	1365	.35	.31 to .40	–a	10.9
Decision commitment	5	1453	.24	.19 to .30	.26	8.42

Notes: k = number of samples, N=total number of individuals in samples, r=mean attenuated correlation, CI = confidence interval, rc=estimate of mean weighted correlation corrected for attenuation, Q=chi-square test for homogeneity of effect sizes *p<.05, ** p<.01.

Table 7. Results of primary meta-analysis: Hypothesized work outcomes and attitudinal variables (Dirks and Ferrin, 2002)

In general, then, these charts suggest a number of constructs that directly impact on trust in a leader within organizational settings. As Dirks and Ferrin (2002) argue, however, the significant chi square values for homogeneity of effect sizes within samples (that is, the Q values) suggest that there may be other factors moderating these effects. If the direct effects were entirely consistent across studies, of course, there would be no heterogeneity of variances within samples.

Looking at the possibility that moderators play a role, then, analyses were conducted to explore a number of key relationships for evidence that these relationships are moderated by other variables.

One set of analyses explored differences in outcomes with direct leader versus indirect leaders (e.g. leaders at a higher organizational level). For some of the outcomes defined, of course, one would expect the effects to be seen when the leader was direct (e.g. job satisfaction), but not necessarily as strongly when considering leaders without direct and personal contact, at a broader organizational level. These analyses showed that the relationship between job performance and trust in a leader was stronger for direct leaders than for leaders within the organization generally. This, of course, is as expected, as the more personal relationship between direct leaders and followers is more likely to facilitate improved performance. Similarly, the relationship between trust in a leader and commitment to the organization was stronger when considering trust in organizational leaders. The type of leader also impacted on interactional justice, procedural justice and participative decision making, as all were more closely related to trust when referring to a direct rather than indirect leaders.

Moderator analyses were also conducted for the different definitions of trust. Intention to quit, organizational commitment, and job satisfaction were more highly related to cognitive trust than to overall trust. Overall trust, on the other hand, was more strongly related to civic virtue and performance than to cognitive trust.

The tendency to understand issues of trust in terms of leadership style, and/or in terms of the quality of the relationship between leaders and followers represents a significant step toward in beginning to articulate how trust develops within this unique relationship. Moreover, the integration provided by this meta-analysis will hopefully help future researchers to focus their efforts on the areas of research that are still weak. As Dirks and Skarlicki (2002) note, there are still a number of limitations of the existing research between trust and leaders. These include:

- Use of cross sectional designs – although typically described in ways that imply causality (e.g. antecedents and outcomes), existing trust research has typically been cross sectional, and so causality cannot be assumed.
- Focusing on whether trust is related to performance, rather than understanding process of why
- Majority of effort on main effects, rather than understanding moderators

Despite these limitations, however, the increasing accumulation and integration of knowledge about trust in a leader is a most encouraging trend for a research area struggling to define itself conceptually and empirically. As the majority of this work related to trust in leaders stems from organizational settings, it is unlikely with recent attention focused on the corporate world that interest in both trust and trust in leaders specifically will wane anytime soon.

This meta-analytic effort is an important one, as it both provides an overview of existing research, as well as identifying areas in need of further investigation, and the need to take a fresh approach to understanding the effects of trust on performance and behaviour as both direct and indirect. This is an issue for us to consider in designing the current program of research. Although it is clear that trust can impact directly on performance, the indirect effects may be somewhat stronger, and perhaps more amenable to consistent results. For our purposes, this work also points to the importance of making the referent (e.g. direct leader vs. organizational leader) very clear.

In short, the trust literature in the last few years has shown a real emergence of interest in trust in leaders. This topic, of course, has received some attention during the course of previous trust research, but the issue of trust in leaders has received a substantial amount of attention relative to trust in teams generally. All of these works provide good evidence that trust in a leader research and theory is maturing rapidly. On the other hand, although understanding trust in the organizational literature does seem to be progressing, it is still somewhat discouraging that so little research addresses the kind of issues likely to exist in small military teams.

2.4 Developments in Understanding Trust in Teams

In comparison to the amount of work addressing trust in a leader, there appears to be relatively little development of research and theory specifically relevant to trust in teams.

Increasingly, however, some trust theorists do seem to be pushing for a different conceptualisation of team trust. In work by Oliver and Montgomery (2000), for example, trust is defined as:

> *The shared perception by the majority of team members that individuals in the team will perform particular actions important to its members and that the individuals will recognize and protect the rights and interests of all the team members engaged in their joint endeavour.*

This definition delineates trust as being a shared perception on the part of the majority of team members. This implies that the very construct of trust in a team requires measurement at the team level of analysis, rather than at the individual level. Although no information is provided about how to do this, this subtle movement to the level of shared team expectations represents an important shift in emphasis from considering trust in teams at either an aggregrated individual level, or as an undifferentiated whole. This is a significant conceptual step forward.

One of the few theoretical models which describes trust at a purely team level is by Webber, 2001. This work considers the role of trust, leadership and support in the context of cross-functional teams. Cross-functional teams are teams whose members perform highly specialized and distinct roles. Cross-functional teams have a number of features that differ somewhat from the small teams which are the subject of this review, particularly in the sense that cross functional teams often have multiple team or project leaders. Nonetheless, the issue of diversity is one that is likely to be faced by all small military teams.

This work defines a number of factors likely to impact on the development of trust within a cross functional team. As teams develop their own "micro-climate" of trust, their ability to develop a positive team climate of trust when team members occupy diverse specializations, may be compromised from several different perspectives (Webber, 2001). Diverse functions may signal a difference in perceived or actual values or goals. Similarly, in teams whose members have diverse functions, there is less of a basis for perceived similarity. Another form of team diversity relates to varying team roles. Within cross-functional teams, members are likely to allocate their time differently, and may have multiple reporting relationships. All of these factors, then, have the potential to impact negatively on the development of trust, as members in diverse teams are likely to have not only diverse bases of knowledge, but diverse value systems as well. This may impact negatively on the teams' ability to achieve optimal performance. To the extent that team performance is a product of teams working to establish themselves, cross functional teams are at risk of taking longer to complete the forming, storming, norming, and performing stages of team development. Moreover, such teams are also likely to take longer to realize their potential in trusting.

As the following model depicted in Figure 7 shows, even if the diverse characteristics of a given team impact directly on the ability of the team to build trust, the relationship between characteristics of the team and team's climate of trust can be moderated by specific leader actions Webber (2001).

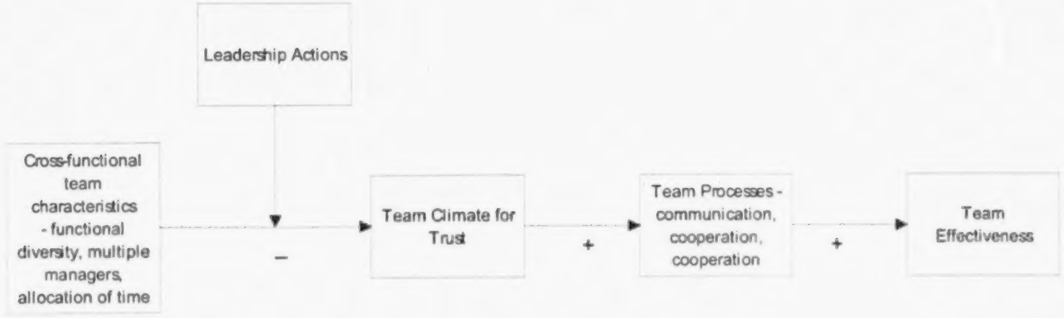

Leadership Actions
Cross-functional team characteristics - functional diversity, multiple managers, allocation of time
−
Team Climate for Trust
+
Team Processes - communication, cooperation, cooperation
+
Team Effectiveness

Figure 7. Leadership actions moderating the relationship between cross-functional team characteristics and a team climate for trust (Webber, 2001)

Webber (2001) argues that in cross functional teams, leaders must work actively to mitigate the potentially negative effects of diversity, both prior to the life of the team, and during the life of team. This includes performing several actions prior to the formation of the team, and during team formation, as indicated in Table 8 below:

Actions Prior to the Formation of the Team	Actions During the Formation of the Team
Gain top management support	Negotiate expectations with functional leaders
Select high ability team members	Build positive relationships with other team leaders
Select team members who are all the same organizational level	Promote a shared commitment to the project
Select team members that have worked well together in the past	Develop and articulate a clear mission for the team
Select team members that have worked well with leader in the past	

Table 8. Leadership actions facilitating team climate for trust (Webber, 2001)

Moreover, as the model argues, this team climate directly determines the team's processes that directly influence team effectiveness. Clearly, within diverse teams, the role of the leader is to moderate the potentially negative impact of diversity, in order to help team members build positive relationships, and to work toward a common vision of the mission. In short, trust within a cross functional team is argued to be very influenced by the ability of the leader to assist the team to look beyond the differences posed by diversity, and to develop and articulate a clear mission for the team, both during the early stages of a project and throughout a project (Webber, 2000).

This model is noteworthy at a number of levels. As noted earlier it is one of the few models that describes trust in teams. Secondly, it is interesting to note that this model is consistent with the developing assertion that the relationship between trust and performance is indirect rather than direct (e.g. Dirks, 1999, 2000, Dirks and Ferrin, 2002). This model depicts trust as influencing team processes, which in turn, influence team performance. Although it seems that this model is intended to be more descriptive rather than to serve as a basis of empirical work, it is important to note that the trust literature does seem to be moving slowly toward strong attention to the role of trust in promoting both direct and indirect effects on performance.

Unfortunately, there is apparently little new empirical research that addresses trust generally within teams. Work by Costa, Roe and Tailleau (2001) has addressed the issue of trust within teams, and has explored the relationship between trust and team performance, by testing a model of trust. This work makes a unique distinction in the trust literature in characterising team effectiveness in three major categories:

1) Team performance – refers to the quantity and quality of team outputs
2) Team member attitudes
3) Behavioural team outcomes – refer to the level of absenteeism and turnover within teams

This work explored trust in more than 100 teams (each with between 3 and 6 members) working in social care institutions in the Netherlands. Teams were chosen on the basis of two criteria, including that they had a minimum of 3 members each, and that their work activity was related to either "*people*" or "*information*". Teams that participated in this research included management teams, supervision teams, supporting teams and facilitating teams. Their hypotheses were as follows:

1. Trust is a multi-component construct, composed of propensity to trust, perceived trustworthiness, cooperative behaviours, and negatively of monitoring behaviours.
2. Trust is positively related to perceived task performance
3. Trust is positively related to team satisfaction
4. Trust is positively related to relationship commitment
5. Trust is negatively related to stress

These hypotheses are expressed in the conceptual model of trust within teams (Costa, Roe, and Taillieu, 2001), presented in Figure 8.

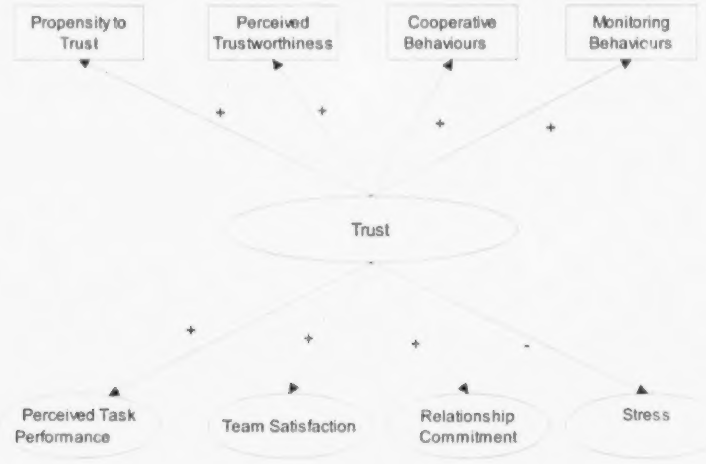


Figure 8. Conceptual model of trust within teams (Costa et al., 2001)

In order to test these hypotheses, team members completed structured questionnaires measuring trust, perceived task performance, team satisfaction, relationship commitment, and stress:

> *Trust.* Measured using 4 scales. Propensity to trust and perceived trustworthiness were measured using adapted scales based on the revised Philosophies of Human Nature (Wrightsman, 1964; cited in Costa et al., 2001) and the Organizational Trust Inventory (Cummings and Bromiley, 1996). The trust behaviour scales were constructed based on existing instruments and interviews, and addressing cooperative behaviours (e.g. "In my team we provide each other with timely information") as well as monitoring behaviours (e.g. "In my team people check whether others keep their promises").
>
> *Perceived task performance.* Perceived task performance was measured using a scale adapted for the group context from the Expanded Delft Measurement Kit (Roe, Zinovieva, Dienes, and Ten Horn, 2000; cited in Costa et al., 2001).

Team scores were created by aggregating individual scores to form a mean score for each team on a given dimension. The level of agreement within teams was explored using an analysis of variance and the within-group interrater agreement index (rwg(j)). Hypotheses were tested using Structural Equation Modelling, which allowed for testing all proposed relationships simultaneously, as well as for evaluating the extent to which the data conformed to the proposed model.

The within-team agreement was first tested, and showed that the between-group variance was significantly larger than the within-group variance on all measures. These findings support aggregation at the team level. As would be expected, all of the correlations between the trust scales were significant (with the exception of the scale monitoring behaviours). Perceived trustworthiness and cooperative behaviours were the most highly correlated.

Before testing the model, two confirmatory factor analyses were conducted to explore the structural properties of the trust components and the dependent variables. These analyses showed that propensity to trust, perceived trustworthiness, cooperative behaviours and monitoring behaviours could be distinguished, and that these represented four distinct factors. Models proposing fewer factors showed an increasing lack of model fit, suggesting that the four factor solution allowed the best fit. A similar analysis was conducted for team effectiveness measures, again showing that 4 distinct factors provided the best structure for dimensions of team effectiveness.

In terms of the structural equation model, the initial test of the original model indicated a poor fit to the data ($\chi = 270.66$, $p < .001$), with other measures of fit also suggesting that the initial model was inadequate. The model's modification indices suggested that the path from perceived task performance to team satisfaction would improve the model's fit. As other empirical work has also shown a relationship between these two constructs, this path was added in the modified model. This model is shown in Figure 9.

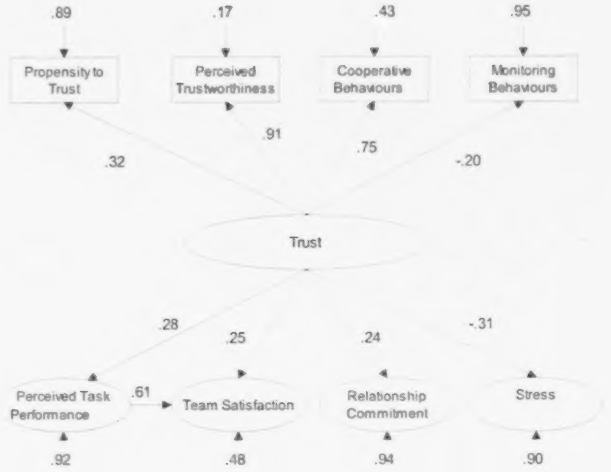


Figure 9. Structural relations as observed (Costa et al., 2001).

Inclusion of this additional path improved the model fit substantially. In the modified model, trust shows a positive relationship with perceived task performance ($\gamma = .28$), team satisfaction ($\gamma = .25$) and relationship commitment ($\gamma = .24$), and is negatively correlated with stress ($\gamma = .31$).

This model shows the importance of perceived trustworthiness in judgements of trust, as well as implicating trust behaviours (e.g. cooperative behaviours, monitoring behaviours) as important components of trust. In keeping with persistent findings in the trust literature, propensity to trust explains only a small percentage of the variance within team trust. Monitoring behaviours also play only a small role. Moreover, the lower half of the model provides support for the assertion that trust impacts substantially within teams, and that it affects team satisfaction, perceived task performance, relationship commitment and stress.

There are, however, a number of limitations of this work. From a research perspective, these effects are small, with trust accounting for 8% of the variance in perceived task performance. Secondly, it is not clear how well these findings would generalize to small military teams, as the contextual factors between a social service agency and a military team are likely to be very different. At a conceptual level, the very definition of some of the concepts within this work may be problematic. The use of the term "perceived trustworthiness" for example, begs the question of what exactly perceived trustworthiness is composed. Nonetheless, the model of trust within teams, and the methods used to validate the model are still of interest, and this work will be informative as our own research proceeds.

The only research directly relevant to trust in military teams seeks to understand perceived combat readiness, as related to both trust in a company leader, and the company leader's trust in the team (Shamir, Brainin, Zakay and Popper, 2000). This work assesses the relationship between perceived combat readiness and several other variables, including experience of unit soldiers and unit leader, the level of discipline in the unit, and the level of individual member's identification with the unit. For our purposes, however, only the two hypotheses related to the leaders' level of confidence in the unit (the higher this confidence, the higher the perceived combat readiness in the unit, and the higher the members' confidence in the unit leader, the higher the perceived combat readiness within the unit), are germane to the issue at hand.

This study involved 50 field companies (24 infantry, 21 tank and 5 engineering). Measures of collective efficacy (equivalent with combat readiness) used 4 items commonly used in morale surveys. These included items such as "To what extent is your company ready, from a professional and military point of view, for war?", rated on a 5-point rating scale.

Confidence in the company leader and the company leader's confidence in the unit were rated with 4 items, including "I have complete trust in him", "I fully trust his decisions and judgement", "I tend to trust his ability to overcome any obstacle", and "In time of war, I would follow him blindly", again rated on a 5-point scale, ranging from 1 (never) to 5 (always). The leader's confidence in company was measured by adapting these items to address ratings of soldiers.

Results showed that soldiers' rating of confidence in leaders did relate significantly to perceived combat readiness at the company level ($ß = .31$, $p < .05$). In general, the more that soldiers trusted their leaders, the more they saw their company to be ready for combat. Leaders' ratings of confidence in soldiers, on the other hand, were not significantly related to perceptions of combat readiness at a company level.

This research may suggest that trust in a leader is more important as a predictor of collective efficacy than trust from a leader to a team. On the other hand, this question cannot be adequately answered by this research, as this work obscures the referents of trust. At a company level, for example, there are typically several different leaders. As the research description does not provide any details about varying levels of leaders, it seems likely that leaders, in general, were assessed. Asking soldiers about their trust in leaders generally may be tapping a much more general dimension than would asking about their specific trust in leaders. This obscuration makes the value of this research somewhat difficult to assess. Again, varying the exact referent being assessed (e.g. a specific, direct leader vs. leaders in general) has the potential to change the conclusions of this research substantially

In short, the level of empirical work within the area of trust in teams specifically is still somewhat discouraging, but developments in adjacent areas (e.g. trust in organizations and trust in leaders) may well help to understand trust in teams indirectly. Hopefully, increasing efforts within this area are not too far off.

2.5 Role of Attributions

In the newest trust work, there is increasing attention to the role of attributions in the development of trust. In many ways, trust is an attributional process, in which inferences about others, their traits, their attitudes, their behaviours etc. combine with one's own self perceptions (Ferrin and Dirks, 2002) to influence trust. We use attributions to understand others and ourselves – for both, we develop our own causal schemas.

In many circumstances, whether we trust someone or not can depend on whether we attribute their behaviour to internal (e.g. dispositional) or external (e.g. situational) causes. Work by Ferrin and Dirks (2002) argues that reward structures are one situational factor likely to impact on interpersonal behaviours, such as the sharing of information and doing so accurately rather than deceitfully. Reward structures can influence the attributions about why people behave positively or negatively towards us. Of course, if someone is rewarded for showing concern for us, for example, we may be less likely to attribute this behaviour to genuine concern for our well-being. Reward structures can be cooperative (whereby both participants in a relationship benefit from cooperating), competitive (in which one's persons gain is literally another person's loss), or mixed (both cooperation and competition are intermittently rewarded).

In general, this research provides support for the assertion that reward structures impact on trust, but this relationship is mediated by several factors, including our perceptions of others' motives. The most provocative finding in this research is that suspicion about others' motives mediated the effect of reward structures on trust, independently of their actual behaviours. It should be noted, however, that this finding is somewhat counterintuitive. Although it is not surprising that the attributions about a fellow teammate would impact on judgements of trust, the fact that this occurred independently of their actual behaviour will require replication using a different paradigm in order to ensure that this finding holds in other experimental contexts. This experiment is also noteworthy because of its unique approach in experimentally manipulating trust, rather than simply using rating scales to measure trust. In this work, trust is manipulated using false feedback about a work partner's actions in an earlier part of the experiment. The experimental manipulation of trust, of course, is not new to trust research (e.g. Dirks, 1999), but being able to control trust within a team will be an important tool in future research. This work makes a meaningful contribution in depicting attributions about one's partner in a work setting to be potentially more critical than the partners' actual behaviours.

The role of attributions is also prominent in other work exploring trust between a leader and a follower. Work by Korsgaard, Brodt and Whitener (2002) addresses the relationship between trust and the role of managerial behaviour and organizational context in determining the meaning of negative episodes between leaders and followers. Negative episodes with a supervisor are seen to trigger a process wherein individuals work to make sense of the event, and to evaluate the implications of this event on their judgements of trustworthiness. The outcome of this process is influenced by attributions of responsibility or blame for the negative event. If one can understand what caused an individual to respond in a negative way, the event need not diminish trust in this person. This work focuses on two dimensions seen in the literature to influence trust in a manager, namely open communication, and the demonstration of concern. To the extent that a manager exhibits these, employees will be less likely to attribute responsibility for negative events to the manager. Moreover, Korsgaard et al. (2002) argue that the context can influence the attribution process. To the extent that the behaviour occurred within a specific context, this context (and not the individual) may have influenced the behaviour. This study manipulates a specific aspect of the context, in varying the fairness of human resource policies, to depict them as either fair or unfair.

This work shows that whether negative incidents harm trust or not depends on managerial behaviours, and on employee's attributions about the negative events. If managers are seen as showing concern and communicating openly (argued to be "managerial trustworthy behaviour"), employees are less likely to hold them responsible for negative events. This suggests that when disagreements do occur, managers are likely to be held less responsible when they communicate more openly and demonstrate more concern for employees. This relationship is even stronger when policies within the work settings are seen as more fair. In terms of actual trust ratings, as expected, managerial trustworthy behaviour was related to employees' trust in the manager. But, contrary to hypotheses, this relationship was not moderated by the fairness of HR policies. Most importantly, however, the relationship between managerial trustworthy behaviour and trust in the manager was partly mediated by attributions of responsibility. Managers seen to display trustworthy behaviour were more trusted, and this relationship held even when adding attributions of responsibility for the negative events to the analysis (although there was a somewhat weaker relationship). As a whole, this work suggests that even negative events need not necessarily destroy trust if the proper attribution can be made.

The role of trust in causal attributions in judgements of trustworthiness is more compelling in recent work addressing interpersonal trust within marital relationships. Recent empirical work suggests that trust can act as a filter, through which events that occur in a relationship are seen and interpreted (Rempel, Ross and Holmes, 2001). This work speaks to attributions that are communicated publicly during problem solving versus those privately held but not communicated. This work suggests that the level of trust within a relationship impacts on the communication that occurs during problem solving discussions. In high trust relationships, attributions that are made publicly during the problem solving process highly parallel those that are made privately, and are generally positive. In middle trust relationships, on the other hand, people express more negative attributions in both public and private contexts as they are motivated by the hope of making the relationship better. People in low trust relationships, paradoxically, are very positive in making public attributions, and their attributions localize blame very well, whereas in private, their attributions are actually very negative. This suggests that when problem solving in trust relationships, the ability to express negative thoughts may actually indicate a healthy level of trust.

As it focuses on trust within the domain of close relationships, it is unclear how relevant this work might be for small military teams. On the other hand, particularly within some military teams, relationships tend to be very interdependent, and can engender high levels of closeness, due to the adversities that must be faced. This work does suggest that the way in which attributions are made within personal relationships is likely to be have a major impact on how perceived violations are understood. With trust in place, it filters information and helps to deal with violations.

Based on this research, it is possible to speculate about whether teams with high levels of trust will be more adept as re-interpreting violations in order to maintain positive team relationships. In the context of small teams, attributions are likely to impact at several levels. Within the context of small teams, there are many opportunities for trust to be violated. Living in difficult conditions with several other people for extended periods of time is a unique challenge faced by many members of small military teams, particularly combat teams. It is particularly important to understand the role of attributions in filtering negative information (or violations) within small teams.

2.6 Innovations in Studying Trust

As this review has shown, the last few years have seen a burst in efforts to understand trust, and there are many new ideas and ways of thinking about trust. Two diverse efforts seem especially likely to foreshadow key future trends for trust theory and research.

The last few years have seen a good deal of energy directed at creating and attempting to validate models of trust. Perhaps the largest effort in this regard is currently underway in a project directed at modelling trust in virtual architecture, engineering and construction (AEC) teams (Zolin et al., 2000). The underlying goal of this work is to develop and validate a model of trust in teams. As the model depicted in Figure 10 shows, perceived trustworthiness (composed of care, competence, understanding, self-control and own control) is affected by similarity to the trustor, role, and rumour and gossip. This model is unique in that it depicts both person-based (competence, care and understanding), as well as category-based factors (e.g. reputation, roles etc.). This model is likely the first to do so. A decision to trust is influenced by both individual factors (e.g. propensity to trust), as well as by situational factors. These include the requirements of the task, social protection (not clearly defined, but presumably social norms or social mores which provide protection against trust being violated), organizational culture, team climate and the "shadow of the future" (the extent to which the team expects to work together in the future). The outcome of this decision either increases or decreases the perceived trustworthiness of the trustee.

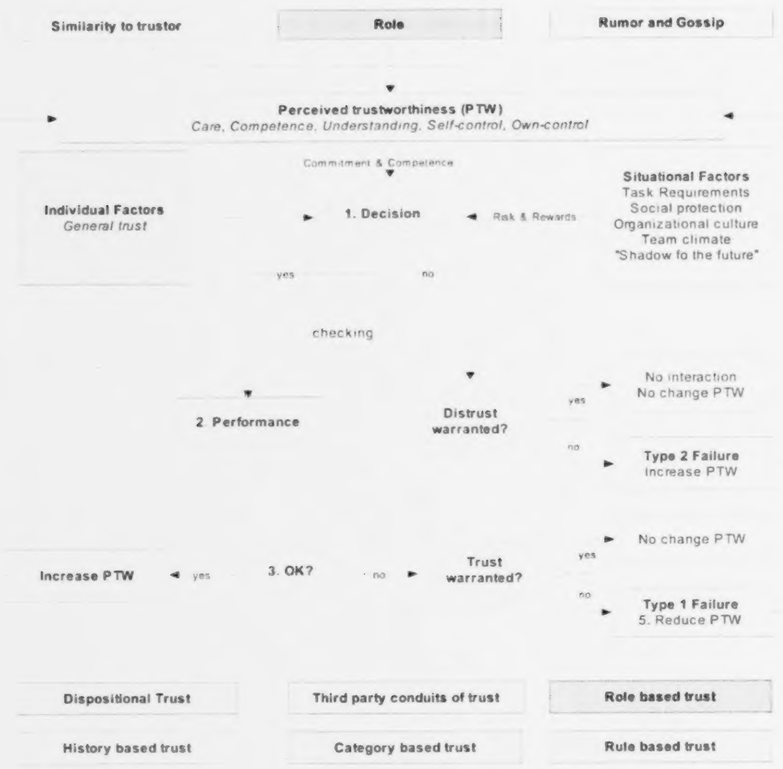
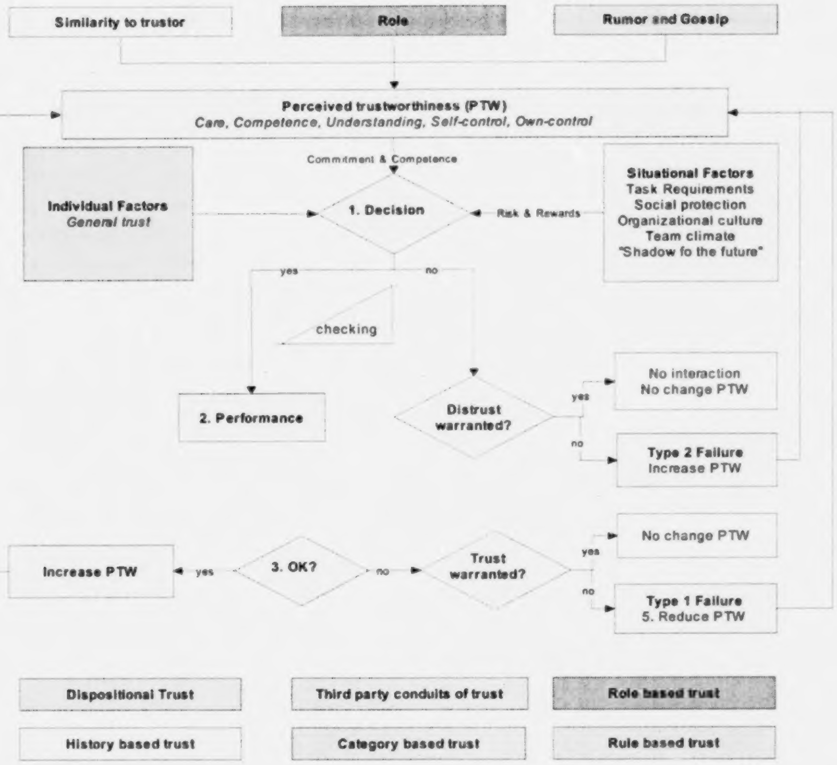

Similarity to trustor
Role
Rumor and Gossip
Perceived trustworthiness (PTW)
Care, Competence, Understanding, Self-control, Own-control
Commitment & Competence
Individual Factors
General trust
1. Decision
Risk & Rewards
Situational Factors
Task Requirements
Social protection
Organizational culture
Team climate
"Shadow fo the future"
yes
no
checking
2 Performance
Distrust warranted?
yes
No interaction
No change PTW
no
Type 2 Failure
Increase PTW
No change PTW
Increase PTW
yes
3. OK?
no
Trust warranted?
yes
no
Type 1 Failure
5. Reduce PTW
Dispositional Trust
Third party conduits of trust
Role based trust
History based trust
Category based trust
Rule based trust

Figure 10. Trust development process model (Zolin et al., 2000)

In order to begin the model validation process, participants in this ongoing research were involved in a 5-month multidisciplinary project in a project learning lab. Seven sets of 4 students (geographically distributed) engaged in a role-play simulation of the activities of a multidisciplinary design/build construction team. The goal of the sets' project was to plan and design the construction of a facility including offices, classrooms, and a computer lab. Each team had at least one architect, one structural engineer, and one construction manager.

Trust as it develops over the course of time within the AEC teams will be monitored. This research has progressed in multiple phases, including early informal discussions at the inductive stage, questionnaires, videotaped meetings and individual interviews at the model building stage (both phases completed), and individual interviews, questionnaires, and faculty interviews at the model validation stage. Questionnaire measures include the following:

- General Trust Questionnaire - assesses the extent to which people, in general, are trustworthy. Items include "Most people are generally good and kind" and "People are always interested in their own welfare".
- Team Trust Questionnaire – Items include "To what extent does your team understand why you need to achieve certain goals required by your discipline?", "To what extent has your team exhibited competence?"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- Dyad Questionnaire (related to specific teammates) – includes measures of checking (equivalent to trust), follow through, perceived trustworthiness (understanding, competence, self-control, own-control)

This ambitious project, still ongoing, provides a good example of the development and early stages of validating a model of trust in interdisciplinary teams. To its credit, this model is the first to elaborate on situational factors, positing several different situational factors likely to impact on the trust development process. It is important to consider the methods and measures used to explore trust in teams. At a conceptual level, however, the conceptualisation of trust as nothing more than "checking behaviour" may well limit the contribution that this model will be able to make to understanding trust within teams. The trust literature clearly suggests that checking behaviour or defensive monitoring is closely related to trust, but many other aspects of trust behaviour are also likely to be relevant within teams.

Lastly, the very way in which trust is understood at a societal level may shift somewhat as the result of recent events, such as 9/11 and many happenings in the corporate world. To the extent that these events can be interpreted broadly as violations of trust, of our trust in either a just world, or in the ability of social systems to protect us from harm, issues of trust would seem to be much more salient and more easily identified than may have been the case in the past. Moreover, there appears to be a more open discussion of the possible liabilities of trust. In an article published in Harvard Business Review titled "When Paranoia Makes Sense", the long established canon that trust is necessarily a good thing is challenged (Kramer, 2002). In discussing the societal impact of 9/11 and the Enron collapse, Kramer argues,

> *These two crises are obviously very different, yet both serve as a reminder of the perils of trusting too much. The abiding belief that trust is a strength is now dangerously naïve.*

In short, Kramer argues (from an organizational perspective) that trust has made us less vigilant, and thus less protected within the "safety nets" that trust affords. Kramer advocates a moderate form of suspicion termed "prudent paranoia", whereby we maintain continual vigilance and never really confer unconditional trust. These ideas about the possible hazards of trust are certainly not in any way new as the result of recent events, and have been published consistently throughout the study of trust. It may well be the case, however, that these events may push trust researchers and theorists toward resolving issues related to the dimensionality of trust versus distrust, and to clearly articulate how these two constructs should be conceptualised. As we noted in the previous trust review, a resolution to this issue is overdue.

Limitations of Existing Models - Important as the existing models of trust development may be, there are a number of deficiencies that limit their potential applicability to the context of small military teams, and to the context of trust between a leader and a follower.

Trust models considered in the previous trust in teams review do not provide a sufficient level of detail in describing the trust development process. Each of the existing models makes a serious contribution toward understanding how trust develops. The influential Rempel, Holmes and Zanna (1985) description of the trust development process, for its part, provides a detailed account of the process by which predictions and attributions relevant to trust develop over the course of relationships. Despite its descriptive power, however, this work does not represent a formal model. Moreover, its emphasis on the affective side of trust may be relevant within the domain of close relationships, but is likely to be less relevant within the military domain. The Lewicki and Bunker (1986) model captures the hierarchical nature of the trust development process, but provides little detail in describing the exact process by which trust progresses. Both of these models, despite their explanatory power, lack comprehensiveness.

On the other hand, simple models such as those provided by Mayer et al. (1995) describe the trust development process from a somewhat different perspective, and argue that factors such as competence, benevolence, and integrity are the key antecedents to the development of trust in another person. The Mayer model also works to specify the processes by which trust develops, including the relationship between perceptions of risk and risk taking behaviour. In general, however, these earlier models of trust development have typically focused on identifying the factors that influence trust, or on specifying the processes by which trust occurs. There would appear to be no early models that provide a high level of analysis in describing both perspectives.

As described in the earlier section of this report, however, more recent models of the trust development process describe it in somewhat more detail, and in domains which are much more relevant to the domain of interest in this work. Conceptualisations of trust within a team, for example, have started to depict the fact that trust is truly dynamic, and argue that understanding trust within a team may require understanding it from the multiplicity of distinct, reciprocal relationships within a given team (e.g., Oliver and Montgomery, 2000). In this sense, models of trust are becoming more elaborated and more sophisticated.

Both current models and earlier models still fail to consistently represent the importance of the context as a critical determinant of the trust development process. To be fair, there is increasing agreement at a theoretical level that context does matter. The level of attention given to this issue is still relatively sparse within accounts of the trust development process and to date, there appear to have been few empirical efforts that have taken the issue of context seriously. Only one set of trust theorists has attempted to incorporate context into existing models of trust development within teams (Zolin et al., 2000). So, existing models of trust, by and large, still fail to capture the complexity of how contextual features are likely to influence trust development.

It is also clear that existing models of trust development have been slow to consider the impact of both person-based and category-based factors on trust development. This may be due to the fact that the research settings in which person-based and category-based trust are studied typically focus on only either one or the other. There is a clear recognition that the person-based factors impact in certain kinds of relationships (e.g. in personal relationship), but category-based factors are still typically explored at more of an organizational level. Based on research and theory in the area of impression formation (e.g. Kunda and Thagard, 1996), we argue that trust judgements are likely to be simultaneously influenced both by the person, and by the category to which the person belongs. This integration seems critical for a model of trust to address. To our knowledge, only the Zolin et al. model (2000) has attempted to incorporate these two perspectives.

Moreover, in creating models of trust in teams (and even trust in leadership) trust theorists have often relied on relatively higher order concepts rather than lower order concepts. A good example of this potential problem from the trust and leadership area is below:

> *Transformational leaders increase followers' trust levels by showing concern for their needs, honouring agreements, demonstrating the capability and persistence to achieve the vision, and possibly through their own willingness to sacrifice for the good of their group (Kirkpatrick and Locke (1996); cited in Jung and Avolio, 2000).*

Certainly, this description of transformational leadership is very closely associated with the identified qualities of a trustee of competence, benevolence and integrity (Mayer et al., 1995). In some sense, this analysis begs the question of what is achieved by using a relatively higher order concept (transformational leadership) when, at the core, the key features that promote in a leader are competence, benevolence and integrity.[4] Although these constructs would certainly appear to be relevant to trust in a leader, in many ways, they appear to be aggregates of more parsimonious concepts. The same may be said of many other constructs evident in the emerging literature related to trust in leaders. Similarly, the construct of "procedural justice" seems closely related to the considerations involved in judgements of a person's integrity. This mixing of high and low order constructs seems to have lead to a multiplicity of terms and factors that all address conceptually similar constructs.

Although, in general, one might argue that the increasing use of higher order constructs within a research area may be seen as progression, it may also be harmful to the conceptual development within this domain if many different researchers and theorists are exploring the same thing at a conceptual level without using the knowledge gained from the study of more parsimonious constructs and ideas. Indeed, in this case, diversification in terms and concepts may lessen the integration (and hence the advancement) within this area of research. In the future, ensuring that theorists and researchers define their terms and clearly state their assumptions about how various terms are related would aid in progressing the scientific study of trust.

Many of the reviewed models seek to model both the factors impacting on trust, the trust development process, as well as the effects of trust on performance and on a wide range of other outcomes. Such a scope requires a considerable degree of simplification. At the early stages of modelling trust, it seems reasonble to focus on the development of trust, and on the factors that influence trust development, rather than working to understand the full spectrum of trust. As existing models of trust seem to show, attempting to model the full spectrum of trust is likely to result in either a very simplistic model, or in a model that is so complicated that it fails to adequately describe the phenomena of interest.

Existing models of trust development have rarely worked to understand the development of trust at a small team level. In fact, although there would appear to be growing attention to the issue of trust between a leader and a follower, only a few recent studies have explored trust within a true team context (e.g. Dirks, 2000; Costa et al., 2001). Although still apparently relatively rare, however, it is encouraging that these studies show increasing elaboration in conceptualising and measuring trust. At the same time, the literature also shows increasing attention to the issue of trust in a leader, and a higher level of elaboration and sophistication in thinking about this unique relationship. Similarly, the need to validate these models is also apparent in several recent research efforts (e.g. Costa et al., 2001).

What is required, however, is not just a model that addresses trust in teams, but trust in military teams. Military teams operate in unique contexts, with unique pressures and goals. Extensions from a very different world in order to understand trust in small military teams may be limited in their validity, and may not yield meaningful results.

Summary - As a whole, this overview of the existing research in the last few years suggests that the study of trust is rapidly coming to fruition, and both research and theory show evidence of considerably more development and sophistication than previously. Considerable progress has been made in conceptualising trust, with increasing integration seen within the trust literature, as well as more linkages between trust literature and theory and work in related domains (e.g. leader-member exchange etc.). Work from the organizational domain related to trust in leaders shows a high level of depth and integration. Research working to understand trust in teams is still lacking, although some innovative efforts are ongoing.

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[4] This observation may be influenced by my relative lack of familiarity with the leadership literature.

Although the amount and sophistication of the existing trust research is encouraging, a model that focuses specifically on small teams within a military context does not yet exist. The goal of this work is to build a model of trust in small military teams, which incorporates a variety of contextual factors identified in the trust literature (e.g., interdependence, risk, vulnerability, uncertainty), as well as several other contextual factors likely to impact on small military teams. This model will also work to understand the entire spectrum of factors likely to impact on trust, in exploring both person-based and category-based factors. Hopefully, this model will address some of the limitations addressed herein.

3 A Preliminary Model of Trust in Small Teams

3.1 Scope and Assumptions of the Trust in Teams Model

This section describes the creation of the preliminary model of trust development in small military teams. At a conceptual level, our goal was to develop a preliminary model to guide our thinking about what trust in small military teams might look like. It seemed reasonable to assume that it would have many features in common with the understanding of trust within related domains. At the same time, however, trust within small military teams is also likely to have unique features and to be subject to unique pressures. The challenges of trust within the small team military context are unlike issues of trust in most other contexts, and this needs to be recognised at all stages of research and theory.

This model of trust development within small teams is intended to start at the point at which one team member is first aware of a new team member. For example, a team member may hear about the new person's reputation even before they actually meet. This model specifies the factors that are likely to impact on judgements of trust as it develops. The current model addresses only the *development of trust*. Although many of the same factors are likely to maintain trust once it develops, this model does not assume that the maintenance of trust necessarily parallels trust development as a whole. Similarly, this model does not address the many consequences or effects of trust. As such, this model will hopefully serve as the basis for future modelling building efforts exploring trust in terms of both antecedents and consequences.

It is important to elaborate on our definition of the concept of a "team". In the team literature, teams are often defined as two or more individuals who work together in order to achieve a specific goal (Dieterly, 1988). The core feature of a team is that its members interact frequently to conduct mutually inter-dependent tasks in pursuit of a common goal.

This model is directed toward understanding the trust development process within small military teams, typically comprising between 3 and 10 members. The military system has many different forms of small teams, ranging from teams within the organization who function at more of an administrative role, to teams that function in combat roles. Moreover, teams also vary in their degree of stability, ranging from adhoc teams to those that are relatively intact and fixed. In choosing a small military team for this research, we sought small military teams with the following characteristics:

- Team Composition – Teams with between 3 and 10 members that have worked together for extended periods with direct and personal contact (i.e. not virtual teams).
- Team Identification - Teams whose members are likely to self-identify as a team. Such teams would have had the opportunity to develop a strong team identity, and represent more than just groups of people who work together.
- Experience in High Risk Situations – Teams with experience in both high and low risk situations are likely to have encountered the full spectrum of trust, and will have a good deal of experience in dealing with trust-relevant issues. Such teams may be better able to articulate their experiences of trust.

- Teams with Leaders Who Are Team Members - Teams with a formal (e.g. externally appointed) leader, as opposed to teams with an emergent leader were sought at this stage of the research.[5] Leaders who are an integral member of the small team and a direct leader of the team, rather than serving a more peripheral monitoring or supervisory function are the focus at this stage of model development.

Although our focus is primarily on the development of trust within a small military team, team members' trust in the leader of the team is also considered in this review. This requires shifting the focus of attention between two different forms of dyadic relationships: from the relationships between team members, and relationships between team members and the team leader.

Truly understanding trust within a team context requires an understanding that extends beyond dyadic relationships. A model that truly depicts trust within a small team would include all of the team's members, with the many relationships between them. To depict the many different trust relationships within a team, however, would yield a model that would be very difficult to decipher. For the purposes of illustration, then, the trust development process is indicated at a dyadic level consisting of only one relationship within the team, namely within team member relationships.

Similarly, many other aspects of teams (e.g. diversity of expertise, size of the team), as well as organizational factors related to leadership (e.g. organizational authority) will not be addressed at this stage of research and theory. In order to limit the variables to a manageable number, these factors will be explored in future work.

3.2 Introducing a Preliminary Model of Trust in Small Teams

Before introducing the preliminary model, the conceptualisation of trust that guides this work is best expressed in the following definition of trust:

> *Trust is a psychological state involving positive confident expectations and willingness to act on the basis of these expectations. Issues of trust arise in contexts that involve risk, vulnerability, uncertainty and interdependence. Trust expectations are created primarily by the interaction of the perceived qualities of the trustee and contextual factors in play when trust decisions are made.*

This definition fully expresses the importance of contextual factors in judgements of trust, was well as identifying how trust expectations come into being. In accordance with this definition, a preliminary model of trust in small teams is presented in Figure 11.

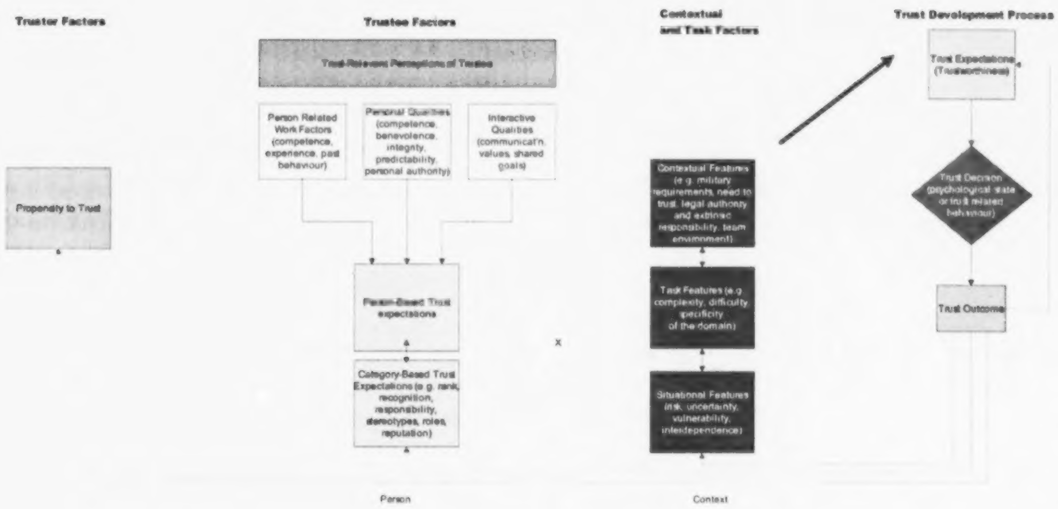

Trustor Factors
Trustee Factors
Contextual and Task Factors
Trust Development Process
Trust-Relevant Perceptions of Trustee
Person Related Work Factors (competence, experience, past behaviour)
Personal Qualities (competence, benevolence, integrity, predictability, personal authority)
Interactive Qualities (communicat'n, values, shared goals)
Propensity to Trust
Person-Based Trust expectations
Category-Based Trust Expectations (e.g. rank, recognition, responsibility, stereotypes, roles, reputation)
x
Contextual Features (e.g. military requirements, need to trust, legal authority and extrinsic responsibility, team environment)
Task Features (e.g. complexity, difficulty, specificity of the domain)
Situational Features (risk, uncertainty, vulnerability, interdependence)
Trust Expectations (Trustworthiness)
Trust Decision (psychological state or trust related behaviour)
Trust Outcome
Person
Context

Figure 11. Preliminary model of trust development in teams

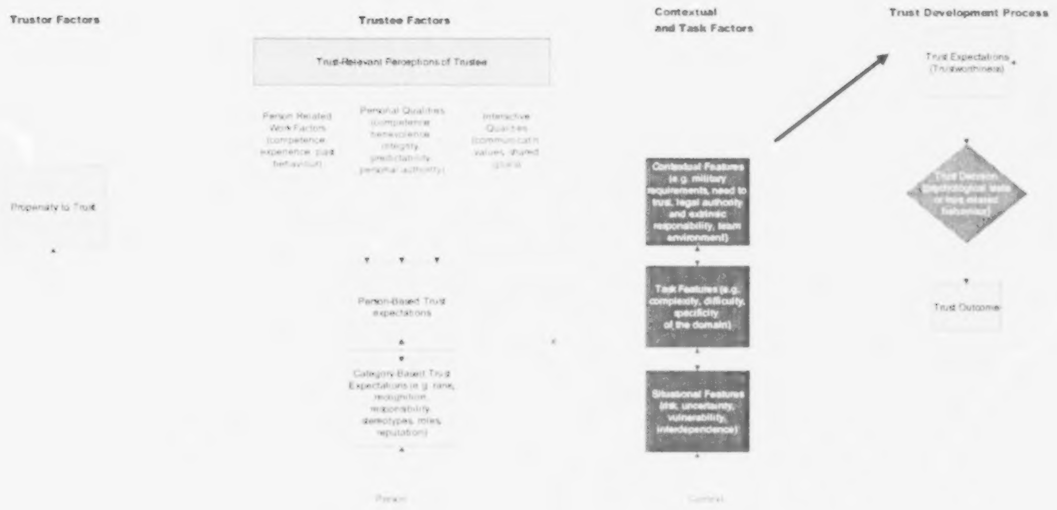
This model is based on a previous literature review of trust within small teams (Adams, Bryant and Webb, 2001). Based on this review (and the source material within), creating the preliminary model involved:

- Identifying sets of candidate factors likely to impact on trust in teams
- Specifying the trust development process

Each of these processes is described in more detail in the sections that follow.

3.3 Identifying Sets of Candidate Factors

Several broad categories of factors (e.g. qualities of the trustee, qualities of the trustor, contextual factors) were identified as important to incorporate into the model of trust development in small teams. Using the information from existing research and theory related to trust in varying contexts (whenever possible, considering trust in the closest possible context to the small team military context), individual candidate factors likely to influence trust within each of these broad sets of factors were identified. At this point, the factors which appeared most frequently in the literature, and which were most likely to be relevant within small military teams (based on our understanding of the military domain) were included as candidate factors. A deliberate attempt was made to be inclusive at this point, rather than exclusive, and to give the factors a chance to be tested within the military environment, rather than to be excluded before having been determined as irrelevant within the military domain.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The preliminary model of trust included three main sets of factors as antecedents to trust within small military teams, including:

- Qualities of the trustee
- Qualities of the trustor
- Contextual and task factors

3.3.1 Qualities of the Trustee

There are posited to be three main influences relevant to qualities of the trustee as shown in Figure 11: work factors, personal qualities and interactive qualities. The first group of influences includes factors likely to affect the trust-relevant perceptions of another team member within the work setting, such as his or her competence in work performance, level of experience on the job, and past behaviour within the work context. In this model, competence in work performance is hypothesized to be a critical determinant of trust in other team members, as a high level of skill and ability may indicate a lower probability of negative outcomes.

The second group of factors identified in the model relates to personal qualities of the trustee, and include benevolence and integrity (Mayer et al., 1995). Benevolence is conceptualised as genuine concern for the welfare of others. People seen to be genuinely concerned with the welfare of others provide protection from negative outcomes, and are more likely to engender trust. In keeping with the existing literature, integrity is defined as a consistency of work and action, credible communications, and a strong sense of justice (Mayer et al., 1995). People with integrity are more likely to be more fair in dealing with others, and are typically seen as more worthy of trust. In addition, predictability is also likely to influence trust. People whose actions are predictable promote trust, as this consistency may lessen the risk of unknown or unanticipated outcomes.

The third group of factors hypothesized to influence trust within a small team relates to the interaction between team members. Interactive factors posited to influence trust development include communication, values and shared goals. Communication can be a valuable tool in building trust because it provides information about oneself. Similarly, shared values and goals are seen as promoting trust both by providing evidence of shared priorities, as well as information about one's probable actions in the future.

Taken together, these three groups of factors combine to influence the *person-based expectations* of crew members in judging the trustworthiness of other teammates. Depicting trust expectations as a single unit, however, is a simplification solely for the purposes of illustration. In fact, trust expectations do not likely represent a single unit, as people have many trust expectations about another person, which may not necessarily be internally consistent. One may trust a teammate in one domain, but have complete distrust in another domain. Because trust is an attitude, it is likely to be subject to the same sorts of ambivalence prominent in attitude research (Thompson, Zanna, and Griffin, 1995).

Several category-based factors likely to influence trust within small military teams are also proposed in the preliminary model. This model argues that trust perceptions within teams are can be influenced by the *categories* to which people belong. This form of trust has been called *category-based trust* (Kramer, 1999). Many common categories (e.g. women, men, doctors, clergy members) are associated with information about the qualities of category members. This information frequently influences our expectations or beliefs about how category members are likely to behave. As such, one might expect for a member of the clergy to be kind and nurturing, or for a lawyer to be opportunistic, even in the absence of direct and personal contact with these individuals. Within the military context, many categories are also salient and may play a role in the extent to which trust is conferred. These factors include the rank attained by the team member or leader (e.g. sergeant, master corporal, etc.). Rank is hypothesized to be a factor in trust because it provides information about the abilities of the person: higher rank is generally regarded as indicative of higher ability. The same is true for such recognition as medals and honours. Medals and honours may promote trust because they are evidence of the external recognition of superior abilities and skills. The role or appointment of a person (e.g. leader, team member) is proposed as a factor in trust, with individuals who occupy roles seen as having more status and thus more likely to be trusted. Similarly, the training received by an individual may also serve as a basis for presumptive trust, to the extent that knowledge about training is seen to make one more able to perform their duties. Lastly, particular stereotypes within small military teams (e.g. cultural, gender stereotypes) are also likely to influence judgements of trust. No specific hypotheses were made about the directional impact of stereotypes.

As such, this model argues that both person-based and category-based expectations are likely to influence judgements of trustworthiness within small military teams. The bi-directional link between person-based expectations and category-based expectations points out that these expectations are merged simultaneously, and combine to influence expectations about the trustworthiness of a team leader or member.

3.3.2 Qualities of the Trustor

The extent to which trust develops within a given relationship will also vary with the trustor's individual stance toward trust. The most cited characteristic in the trust literature is called propensity to trust. Propensity to trust is typically seen as a relatively stable individual difference, which derives from previous trust experiences. A person's propensity to trust can influence the extent to which one is engaged in trust issues, as well as the very style adopted in relating to others.

3.3.3 Contextual and Task Factors

Factors related to the task and to the context in which judgements of trust are made will also affect trust development within small teams. Various contextual features, such as the nature of the task and situational antecedents are all likely to influence judgements of trust.

The first contextual factor relates to features of the military as an organization. These include both organizational features (e.g. the structural hierarchy in which the team is embedded), as well as other aspects related to the military context (e.g. military requirements, need to trust, legal authority). Within many organizations, for example, trust is demanded by the nature of the tasks to be performed interdependently. If a given task can only be performed in cooperation with others, for example, need to trust may promote the emergence of trust in a way that would not otherwise be the case.

Several team aspects are also likely to influence trust development within a small team. These may include cohesion within the team, team size, and diversity of expertise within the team.

The nature of the task implicated in the trust decision (e.g. complexity, difficulty, and specificity of the domain) is also argued to be a predictor of trust within a small team. Moreover, we also argue that the extent to which given tasks provide observable information which may be relevant to judgements of trust is also a key factor likely to affect trust. Complex tasks with a high level of transparency, for example, may provide a better basis on which to judge the trustworthiness of another person.

Lastly, situational antecedents identified in the trust literature (risk, uncertainty, vulnerability, and interdependence) are argued to be key predictors of trust within military teams. As issues of trust are most likely to emerge in high risk situations, these situations also provide the most opportunity for the development of trust.

3.4 Specifying the Process of Trust Development

Having identified the various sets of candidate factors, it was important to articulate our view of how trust might develop over time as the result of these factors. To guide our efforts, we initially considered the trust development process identified in other existing models of trust. Several early trust models, generally functioning at relatively low levels of complexity and scope were considered (e.g., Mayer et al., 1995).

A key aspect of specifying the model of trust development within a team involved hypothesizing about how the factors determine the trust development process. First, person-based and category-based factors are depicted as combining to influence the formation of trust expectations. Older theories of impression formation (e.g. Brewer, 1988) have argued that categorical factors are prominent at the early stages of forming impressions of others, but that person-based factors play more of a role with increasing familiarity. A developing theory of impression formation (Kunda and Thagard, 1996) argues that expectations of other people are simultaneously influenced by both the categories to which these people belong, as well as by their personal traits and characteristics. Forming an impression about another person's trustworthiness is one small part of the global impression formation process. We argue that expectations about trust are likely to be simultaneously influenced by both person-based and category-based factors.

The next stage of model creation required hypotheses about how specific factors posited to impact on trust development combined with the contextual factors. The significance of factors concerning the trustee (and, in fact, the weight given to each of these factors) will vary depending on the context. We have chosen to depict this relationship using an interactive function, on the basis that it most closely parallels the psychological processes in which people engage when making decisions to trust. Believing that a person is competent in a given task, for example, will only affect judgements of trustworthiness if the trust decision at hand implicates the known task. If the trust decision at hand does not require this specific form of competence, one may confer trust very differently. Similarly, in situations with very high risk, the qualities that one looks for to judge the trustworthiness of a leader or crew member may be very different from the qualities that one looks for when the risks are less. The depiction of an interactive function, of course, between the person and the situation follows on a common distinction originating in social psychology (Alcock, Carment and Sadava, 2001). Theoretical accounts of trust development have noted the importance of the relationship between the person and the situation (Mayer et al., 1995), but this perspective has yet to be fully incorporated into trust models. This model attempts to do so, by specifying that trust expectations are determined by the interaction of a trustor and trustee's qualities and characteristics, and the features of a situation that are in place at that time.

The proposed model depicts trust expectations leading to a trust decision. For the sake of illustration, we consider the trust decision as a concrete decision occurring at a discrete point in time. This, of course, is not always the case. Judgements about the trustworthiness of another person may be more at an implicit than explicit level. One may have the feeling that this person is trustworthy, but does not necessarily make a discrete trust decision in the course of simply interacting with this person, as the situation may not demand such a decision. This model does not distinguish between these different forms of trust decisions, but argues that a trust decision may occur as either a discrete decision, or as a general impression that may be expressed in both implicit and explicit forms of trust decisions. This decision may manifest itself in terms of either trust as a psychological state (e.g. one trusts another person), or may be manifested in trust-related behaviours.

Within existing trust models, trust development was also depicted as having a feedback loop, in the sense that trust is both expressed by engaging in risk taking behaviour, also created by successful outcomes in past trust behaviour. The outcome of a trust decision was depicted as impacting on subsequent judgements of trust, and on the likelihood of trusting behaviour occurring in the future. We expected that trust would have the same iterative or spiralling quality. The preliminary model depicts the outcomes of trust as influencing the trust development process by impacting on one or all of the following:

1. Directly, by impacting on trust expectations – The outcome of a trust decision may impact directly on expectations of trust. This may happen in two ways. Either a positive or negative trust outcome may result in an individual revisiting the source of trust expectations, the perceived qualities of the trustee. Revising these qualities may result in better-calibrated trust expectations. Another possible impact of a trust outcome is that trust expectations are summarily changed. In such a case, the trustee may be immediately viewed as untrustworthy, for example, without further elaboration.
2. Directly, by impacting on a person's construal of the trustworthiness of the person – A trust outcome can lead to the re-evaluation of the person's trust-relevant qualities. This may involve, for example, reconsidering the person's integrity, competence or motivation as a way of recalibrating one's trust expectations in order to guard against future surprises.
3. Indirectly, by impacting on a person's construal of the situation – A trust outcome can vary the view of the situation, and may require re-evaluating the risks inherent in other trust decisions, or re-evaluating the demands of a task
4. Indirectly, by influencing the propensity to trust – A trust outcome with serious consequences or which greatly violates one's expectations may lead to revisions in one's propensity to trust as a personal characteristic.

When faced with choices about trust, then, a person's trust expectations are used to make a trust decision. Trust decisions typically have consequences, although we would argue these decisions are likely to vary in terms of their observability and their discreteness. These outcomes, obviously, can be either positive (e.g., trust is rewarded) or negative (e.g., trust is violated).

3.5 Requirements for Informal Model Validation

With the preliminary model in place, a plan was established to informally validate it using focus groups consisting of members of small military teams. This work progressed in two simultaneous phases. In the first phase, members of small military teams were asked to explore their own definitions of trust within the small team context, with particular emphasis on trust between a leader and a follower. Team members also completed questionnaires, in which they rated the extent to which various qualities or characteristics influence their judgements of trust in other teammates, and in their leaders. These questionnaires allowed a comparison of the relative importance of the various factors proposed to influence trust in the preliminary model, as well as providing feedback about the validity of the trust development processes hypothesized in the preliminary model.

In thinking about the data capture requirements for validating the preliminary model, the ethical implications of exploring trust within intact teams played an important role in defining the structure of the focus groups, and in planning how to conduct the focus groups. Especially in teams where the leader is an active team member, the relationship between a team member and a leader is a complex one. Asking crew members to discuss trust in their direct leader puts them in a potentially vulnerable position. It may be very difficult for followers to express their true feelings toward their leader without being concerned about the ramifications if the leader gains access to this information. Similarly, asking leaders to discuss their levels of trust in crew members has the potential to influence the leader-follower relationship (both negatively and positively), in terms of a crew member knowing one's true status with a leader, as well as other crew members altering their views to match the views of the leader toward a crew member. Moreover, the very process of making trust salient within team relationships, regardless of the kind of relationship, has the potential to disrupt these relationships both directly (by other team mates learning whether they are trusted or not), and indirectly, via increasing recognition of one's own views of other team mates. Both of these processes, we argue, may influence the dynamic of trust within existing teams in the long term.

In order to alleviate the possible risks, we did not interview intact crews, but conducted focus groups with crew members who occupy similar roles within their respective crews (e.g. gunners, drivers, surveillance operators, crew commanders). By interviewing all the gunners at a time, for example, each gunner was able to talk about the factors that affected trust in other crew members, without the other members having access to this information. In addition, in order to further protect trust within the crews that we interviewed, we also asked that specific examples or anecdotes that identified specific individuals or situations not be used at any time. Although this likely affected the depth of the focus groups somewhat, this compromise was critical in order to provide a higher level of protection against betraying confidentiality. With these precautions in place, we hoped to gain a deeper understanding of the dynamics of trust within small military teams, without affecting the actual trust within these intact teams.

The small teams chosen to participate in this research were armoured reconnaissance vehicle crews. Armoured reconnaissance tasks commonly include setting up concealed forward surveillance posts, typically for periods of up to 48 hours, and in close contact with the enemy. As such, these teams are among the first personnel to enter hostile territory during operations. Their role is typically to conduct surveillance, in order to identify the location and status of hostiles, and to set up a system of communication to be used for troops advancing either in mechanized or dismounted units. Crews consist of 4 personnel, a driver who navigates the vehicle and is positioned in a separate compartment at the front of the vehicle, a gunner for protection, a surveillance operator who sets up the surveillance radar systems and establishes a base of communications, and a crew commander who runs operations and follows the route defined. Generally, in the field, crews share duties on a watch system and individual crew members are highly interdependent for all aspects of life in the field. Although individual armoured vehicles have four person crews, for both training and operation, two vehicles always work in tandem.

These crews had characteristics that closely matched the established criteria. Specifically, these vehicle crews are true teams, as their work requires a high level of interdependence and cooperation. Because of this high level of interdependence, these teams are likely to have established a clear sense of team identity. Armoured vehicle crews have 4 personnel, and the crew commander is both formally appointed and is an integral member of the team. Moreover, these crews have a varying range of experience in dealing with high levels of risk, uncertainty and vulnerability. Their experiences during operations and in garrison are likely to have made issues of trust salient, and members of these teams were seen as likely to be well versed in thinking about issues of trust.

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4 Refining a Model of Trust in Teams

Introduction – At the early stage of this work, a preliminary model was created as a tool to guide our thinking about the development of trust in teams. In order to refine the preliminary model of trust development within small military teams, several members of armoured vehicle reconnaissance crews participated in focus groups designed to explore trust within teams. These focus groups included both guided discussions about trust within teams, as well as completion of rating questionnaires addressing the extent to which specific qualities and characteristics are important in making judgements about the trustworthiness of other team members.

The focus group sessions had two main goals. At a qualitative level, the goal was to informally assess the match between the preliminary model, and the experiences of small military team members in developing trust. This included a comparison of both the factors believed to influence trust, as well as the process by which trust development occurs. Relevant questions included:

- How well does the conceptualisation of trust and the factors hypothesized to impact on trust match with a small military team member's views of trust?
- What factors not included in the preliminary model should be included?
- What factors, if any, should be excluded from the existing model?
- To what extent does the proposed model accurately capture the trust development process from the perspective of small military team members?
- Which processes not included in the preliminary model should be included?
- What processes, if any, should be excluded from the model?

At a quantitative level, it was important to assess the relative importance of specific qualities and characteristics in determining trust in other teammates. Relevant questions include:

- What is the relative importance of the various factors in the preliminary model?
- Do crew members and crew commanders have different standards for trust?
- Do members of small teams have different standards for members who occupy different positions in the team (e.g. team members vs. team leader)?

4.1 Participants

This study was conducted at CFB Petawawa. Participants for the study were 13 Regular Force members of armoured vehicle crews (4 gunners, 3 drivers, 3 surveillance operators and 3 crew commanders) from an armoured regiment specializing in reconnaissance. These participants had between 1 year and 18 years of experience in the Canadian Forces, with an average of 7.5 years of experience.

4.2 Method

Participants were briefed as a group on the objectives of the study, its relevance and potential benefit to the military, on the nature of their participation (i.e., format of focus groups, time commitment), and the associated risks. Participants were asked to reflect on their trust-relevant experiences without providing specific information that directly or indirectly identified individuals.

Each focus group had between 2 and 4 members. Crew members were interviewed for approximately 2 hours each, according to job description (e.g. drivers, gunners, surveillance operators, crew commanders). Four focus groups were conducted. As noted earlier, these groupings were designed to ensure that intact teams who worked together regularly were not interviewed as a unit, in order to minimize the probability of influencing team trust. Each focus group was lead by a trained facilitator, who directed conversation to the themes while trying to be as unobtrusive as possible.

After this briefing, participants were asked a series of questions designed to elicit their trust-related experiences within their roles as members of an armoured vehicle crew. Each focus group progressed in four phases. In the first phase, the facilitator introduced the topic of trust, and asked participants to reflect on their definitions of trust. Participants were asked to give examples of trust issues from their previous experiences.

The second phase related to the trust development process. Participants reflected on how trust develops within a team, and on what causes trust to fluctuate with respect to two different scenarios. In the first, participants were asked to consider a new crew member (e.g. gunner, driver or surveillance operator) entering the team, and to describe the process by which judgements about the trustworthiness of this person are likely to be made. In the second scenario, participants were asked to consider the trust development process when a new crew commander enters a crew.

The third phase explored the specific factors that impact on the development of trust in other team members. Within each focus group, participants were asked to work as a group to help generate a list of the factors that influence trust within their teams. Each group worked through the process of refining this flip-chart list with the facilitator.

During the fourth phase, participants completed questionnaires in which they rated the importance of various traits and qualities in their judgements of trust. The first questionnaire related to trust in fellow crew members in varying roles (e.g. driver, surveillance operator, gunner). The second questionnaire related to trust in a crew commander.

4.3 Results

4.3.1 Quantitative Data Overview

A rating scale addressing the qualities and characteristics likely to influence trust within a team was created. Items in this rating scale were based on the factors identified in the previous trust in teams review (Adams, Bryant and Webb, 2001), the recent trust literature, and on the basis of the preliminary m gs of the extent to which several qualiti rew members and crew commanders. d in Figure 12 below.

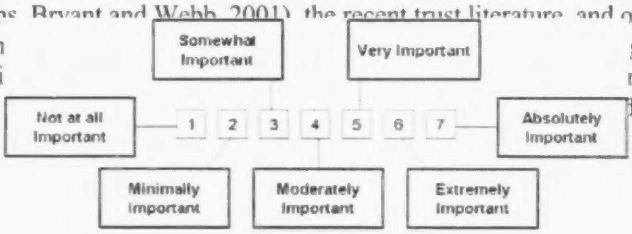

Figure 12. Rating scale for trust questionnaire

In order to simplify the quantitative analyses, we explored the validity of indexing multiple items tapping the same underlying dimension (e.g. multiple items relating to competence, experience, concern for others, integrity). Reliability analyses conducted on these related items showed them to be highly reliable, with Cronbach alphas ranging from between .76 to .96. This suggests that indexing the items into several distinct dimensions was appropriate.[6]

Ratings Provided by Crew Members - Each crew member completed ratings of how important each quality was in their judgements of trust for all 4 positions in the armoured vehicle crew. The first analysis (presented in Table 9) explores crew members' mean ratings (and the relative importance of each dimension) across all positions.

Crew Member Ratings (n = 10)	Mean (across all roles)	Relative Importance
Competence in military skills	5.6	9
Competence in leadership skills	6.0	3
Concern for welfare of others	5.6	10
Integrity	5.8	6
Predictability	6.0	2
Motivation / initiative	5.6	8
Willingness to accept responsibility	6.2	1
Responsibility given	5.1	14
Communication	5.9	5
Experience in military settings	5.6	7
Experience in other settings	5.3	13
Physical qualities	5.4	11
Reputation	5.3	12
Rank	3.8	16
Medals and honours	4.1	15
Team orientation	6.0	4

Table 9: Crew Member Ratings (All Roles Combined)

As this table suggests, crew members judged all but one of the qualities/characteristics in the scale to be at least moderately important (that is, ranging between 4 and 7), with the majority of items being rated as very important or absolutely important. More specifically, willingness to accept responsibility, predictability and leadership skills were the most influential in judgements of the trustworthiness of all other crew members. Rank was rated as least important, with a mean of 3.8. Medals and honours were rated the next least important, with the level of responsibility given to a trustee the next least important.

The next analysis examines whether crew members rated the qualities of a trustee used to gauge trust differently, depending on the role of the person being judged. Are the same qualities important in judging the trustworthiness of a gunner and a commander? As each crew member did

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[6] Full listing of scale items used in each dimension provided in Annex B.

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4 separate ratings of the importance of each characteristic in their judgements of crew members occupying specific roles, a repeated measures analysis was appropriate.[8] As the shape of the population was unclear, a non- parametric statistic was employed to assess differences in the perceived importance of specific qualities in making trust judgements about other crew members.[9] The resulting table of means, standard deviations, and the p-values for the Friedman's ANOVA are presented in Table 10:

Crew Member Ratings n = 10	Person Being Rated – Means (StDev)				
	Gunner	Driver	Surveillance Operator	Commander	P value
Competence in military skills	5.6(1.0)	5.5(0.9)	5.5(1.0)	5.8(0.8)	p>.05
Competence in leadership skills	5.8(1.2)	6.1(1.0)	5.7(1.1)	6.3(0.5)	p>.05
Concern for welfare of others	5.5(0.9)	5.5(0.9)	5.5(0.9)	5.7(0.8)	p>.05
Integrity	5.7(0.9)	5.7(0.9)	5.7(0.9)	5.9(0.6)	p>.05
Predictability	6.1(1.1)	6.1(1.1)	6.1(1.1)	5.8(0.8)	p>.05
Motivation and initiative	5.6(1.1)	5.6(1.1)	5.6(1.1)	5.6(0.9)	p>.05
Willingness to accept responsibility	6.1(1.0)	6.1(1.0)	6.1(1.0)	6.6(0.5)	**p = .03***
Responsibility given	5.1(1.9)	4.8(1.8)	5.0(1.8)	5.3(1.8)	p>.05
Communication	5.9(1.2)	5.9(1.2)	5.9(1.2)	6.0(0.9)	p>.05
Experience in military settings	4.8(1.6)	4.5(1.4)	4.4 (1.4)	5.2(2.4)	p>.05
Experience in other settings	3.7(0.3)	3.7(0.3)	3.7(0.3)	3.7(0.6)	p>.05
Physical qualities	5.6(0.9)	5.5(0.9)	5.3(0.8)	5.1(1.0)	**p = .02***
Reputation	5.2(1.3)	5.2(1.3)	5.2(1.3)	5.3(1.1)	p>.05
Rank	3.7(1.8)	3.7(1.8)	3.7(1.8)	4.2(2.1)	p>.05
Medals and honours	4.2(1.8)	4.2(1.8)	4.2(1.8)	3.6(1.0)	p>.05
Team orientation	5.9(1.0)	5.9(1.0)	5.9(1.0)	6.1(0.7)	p>.05

Table 10: Crew Member Ratings by Role

As these analyses show, the importance of a specific trust-relevant factor is generally consistent across roles. The Friedman's ANOVA on competence in military skills, for example, show no significant difference between the importance of competence in judging the trustworthiness of gunners, driver, surveillance operators and crew commanders, although in general, means for crew commanders are somewhat higher. Crew members did see two characteristics as differentially important across roles. Crew members rated willingness to accept responsibility as differentially important across roles, and as considerably more important for crew commanders than for other members of the crew. The importance of physical qualities also varied across roles, and there was a trend for physical qualities to be rated as more important for gunners and drivers than for surveillance operators or crew commanders. Crew members rated all other qualities and characteristics as equally likely to influence their judgements of trust across varying roles.

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[8] Although it would have been ideal to evaluate the between subject factor (e.g. the rater's own position), this would have resulted in cell sizes of 3. As such, a decision was made to treat crew members' ratings as a unit.

[9] Unfortunately, this statistic does not allow for posthoc comparisons. As such, only patterns within the means can be addressed in the analyses that follow.

It should also be noted that although crew members did not rate most trust-related qualities as differing in importance across roles, there was a general trend for the trust-related qualities to be rated as somewhat more important for crew commanders than for crew members, with little difference between ratings for crew members. In short, with small exceptions, the standards that crew members use to assess the trustworthiness of all other crew members (including crew commanders) are fairly consistent across varying roles.

Ratings Provided by Crew Commanders – Similar analyses were conducted on ratings provided by the crew commanders. The table below shows the means and relative importance of the dimensions rated on crew commanders' judgements of trustworthiness (across all roles combined).

Crew Commander Ratings (n=3)	Mean (across all roles)	Relative Importance
Competence in military skills	5.4	9
Competence in leadership skills	5.6	8
Concern for welfare of others	5.2	11
Integrity	5.7	5
Predictability	5.7	6
Motivation / initiative	6.1	2
Willingness to accept responsibility	6.2	1
Responsibility given	5.2	10
Communication	5.6	7
Experience in military settings	4.8	13
Experience in other settings	4.5	14
Physical qualities	5.9	3
Reputation	4.4	15
Rank	5.0	12
Medals and honours	3.4	16
Team orientation	5.7	4

Table 11: Crew Commander Ratings (All Roles Combined)

For crew commanders, as for crew members, most qualities and characteristics were deemed to be important in gauging the trustworthiness of other team members, as evidenced by all means except one being above the midpoint of the scale. Willingness to accept responsibility was rated as the most important quality for making judgements about the trustworthiness of other crew members. Unlike crew members, however, crew commanders rated motivation as the next most important quality in their judgements of trust, with physical qualities the next most important characteristic. Similar to crew members, however, crew commanders also rated medals and honours as the least important influences on their trust in all other teammates. Crew commanders also rated reputation as relatively unimportant.

It is also important to explore whether crew commanders give differential weight to trust-relevant qualities and characteristics, depending on the position they are judging.[10]

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[10] As only 3 crew commanders completed questionnaire ratings, only descriptive statistics can be meaningfully used to describe the ratings of crew commanders.

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Crew Commander Ratings n = 3	Person Being Rated – Means (StDev)			
	Gunner	Driver	Surveillance Operator	Commander
Competence in military skills	5.5(0.2)	4.7(0.4)	4.6(0.9)	6.7(0.1)
Competence in leadership skills	5.4(0.7)	5.1(0.5)	5.1(0.5)	6.2(0.8)
Concern for welfare of others	5.1(0.5)	5.1(0.5)	5.2(0.5)	5.5(0.9)
Integrity	5.6(0.3)	5.5(0.1)	5.7(0.2)	5.7(1.0)
Predictability	5.7(0.3)	5.7(0.3)	5.7(0.3)	5.8(0.5)
Motivation and initiative	6.2(0.5)	6.2(0.5)	5.8(1.1)	6.1(0.7)
Willingness to accept responsibility	6.3(0.6)	5.7(1.5)	6.7(0.5)	6.0(1.0)
Responsibility given	5.7(0.6)	4.7(0.6)	4.7(0.6)	6.0(1.0)
Communication	5.7(0.6)	5.3(0.6)	5.3(0.6)	6.0(1.0)
Experience in military settings	5.6(1.3)	5.6(1.2)	5.5(1.4)	5.8(0.7)
Experience in other settings	4.4(1.4)	4.4(1.4)	4.4(1.4)	4.0(1.3)
Physical qualities	5.4(0.6)	4.9(0.6)	4.9(0.5)	6.2(1.1)
Reputation	4.6(0.6)	4.0(0.6)	4.0(0.6)	5.0(1.0)
Rank	5.0(1.0)	4.7(0.5)	4.7(0.5)	5.7(1.5)
Medals and honours	3.7(2.1)	3.0(1.0)	3.0(1.0)	4.0(1.0)
Team orientation	5.6(0.4)	5.6(0.4)	5.6(0.4)	5.8(0.9)

Table 12: Crew Commander Ratings by Role

In general, crew commanders rate many of the qualities to be more influential in their judgements of trust in crew commanders than in other crew members. Looking at the crew commander means, more exacting standards seemed to have been applied for competence, concern for welfare, responsibility given, physical qualities, reputation, rank, medals and honours and team attitude. Moreover, in rating crew members, crew commanders also showed a tendency to rate many qualities as more influential when judging gunners than when judging drivers or surveillance operators. This, presumably, relates to the general notion that the gunner position is the most taxing, and the driver position the least taxing.

The next analysis directly compares crew member ratings and crew commander ratings. In general, although there are some differences, crew members and crew commanders do not appear to see the trust world substantively differently. In fact, the average difference is 0.5 on a 7 point scale. In terms of differences, crew commanders rate motivation and physical qualities to be more important than do crew members. The most prominent difference is in crew commanders' ratings of the importance of rank in judgements of trust at 5.0, whereas crew members rated rank as the least important quality of all (mean = 3.8). Crew members, on the other hand, rate leadership skills, concern for welfare, and experience in both military and non-military settings more highly than do crew commanders.

	Crew Member Ratings (n = 10)	Crew Commander Ratings (n = 3)	Difference
Competence in military skills	5.6(0.9)	5.4(0.4)	0.2
Competence in leadership skills	6.0(0.9)	5.6(0.6)	0.4
Concern for welfare of others	5.6(0.8)	5.2(0.4)	0.4

Integrity	5.8(0.8)	5.7(0.3)	-0.1
Predictability	6.0(1.0)	5.7(0.2)	0.3
Motivation / initiative	5.6(1.0)	6.1(0.7)	-0.5
Willingness to accept responsibility	6.2(0.9)	6.2(0.9)	0
Responsibility given	5.1(1.8)	5.2(0.7)	-0.1
Communication	5.9(1.1)	5.6(0.7)	0.3
Experience in military settings	5.6(1.1)	4.8(1.7)	0.8
Experience in other settings	5.3(1.1)	4.5(1.3)	0.8
Physical qualities	5.4(0.8)	5.9(0.7)	-0.5
Reputation	5.3(1.3)	4.4(0.7)	0.9
Rank	3.8(1.7)	5.0(0.4)	-1.2
Medals and honours	4.1(1.4)	3.4(0.9)	0.7
Team orientation	6.0(0.9)	5.7(0.5)	0.3

Table 13: Crew Member and Commander Ratings

Summary – In short, crew members and crew commanders both attach importance to the three most commonly mentioned qualities that influence trust, including competence, concern for others and integrity. Willingness to accept responsibility and predictability of fellow team mates (either soldiers or commanders) were also deemed to be very important. The consistent finding that willingness to accept responsibility is the most influential attribute in judgements of trust is particularly important, given the strong relationship between authority and willingness to accept responsibility noted in the literature (Pigeau and McCann, 2001).

Although there is a good deal of consistency between what crew members and crew commanders see as important in judging the trustworthiness of other crew members, there are also differences in the qualities seen to be most influential. Crew commanders attach much more importance, for example, to the issue of rank than do crew members.

In terms of the standards used to judge people in different roles, both crew members and crew commanders seem to generally expect more of crew commanders. This is perhaps unsurprising, in light of the higher level of responsibility which commanders must shoulder. In general, then, there is a relatively good match to the trust literature, although the pattern of means is not entirely in keeping with the notion that competence, benevolence and integrity are the most important dimensions in judgements of trust. It is important to note, however, that due to the small sample sizes (10 crew members and 3 crew commanders), these results need to be replicated with larger samples of participants.

4.3.2 Qualitative Data

Focus groups also allowed members of small military teams to identify a wide range of factors that impact on their trust expectations of other crew members and crew leaders. In addition, a number of contextual variables were also argued to influence trust. This section of the report reviews each of these factors in turn, and offers examples provided in by the focus group participants of how each factor influences trust within small military teams.

Person-Based Factors

4.3.2.1 Competence in Military Skills

Within the focus groups, there was considerable agreement that the competence of a crew member or leader is the attribute that is most influential in judgements about that person's trustworthiness.

> *The biggest thing about trust in this job, is ughh...job knowledge and skill. I don't know if it's really so much of a trust [unknown segment]. Trust maybe eventually comes down to really 'well, he knows his stuff, I don't have to worry about him, but this guy I don't know". (crew member)*

> *...how do you build trust within a small group?...you don't build it...it has to be earned...and how did he earn my trust?...he earned my trust by accomplishing tasks that I gave him in a timely and professional manner (crew commander talking about crew member)*Within an armoured vehicle crew, competence was related to the successful performance of several key military skills. Skills seen as critical within this domain range from very simple and discrete skills, such as putting up the cam-net when setting up in the field, to more complex skills, including tactical expertise and ability to navigate.

Of course, not every skill was seen to impact equally on judgements of trust. If an individual showed problems performing even simple skills, for example, one might be less likely to trust this person than if that individual displayed problems executing a more complex skill. The competencies seen as most influential on judgements of trust were also context dependent. Within the garrison, for example, interpersonal competency was seen as more important than in the field. In the field, tactical skills were seen as the most important form of competency likely to impact on judgements of trust.

4.3.2.2 Competence in Leadership Skills

Skills frequently associated with leadership (e.g. problem solving) were also noted to be influential on judgements of the trustworthiness of other crew members. Most notable among these was the ability to deal with stress. Focus group participants expressed this issue in describing the distinction between competent performance in garrison, where stress is low and there is adequate time to make decisions, and being in the field, where the ability to deal with a variety of stressors (e.g. time pressure, sleep deprivation) is perhaps the most important form of competence used to judge the trustworthiness of other teammates.

4.3.2.3 Concern for Welfare of Others

In the existing trust literature, the benevolence of another person, the extent to which this person is seen to be genuinely caring and concerned is argued to be a primary determinant of this person's perceived trustworthiness. As such, benevolence is typically seen as more affective rather than cognitive component of trust.

Within the small armour crew that we interviewed, perhaps because the expression of overt emotion is not generally sanctioned within this domain, comfort with the affective component of trust proved somewhat problematic. One of the crew commanders was explicit about not liking the term "*trust*". In comparing his preferred terms of "*reliability*" and "*ability to depend on*", he explained the term "*trust*":

> *...I think it's the same terms, but in the military...trust is like something that's (SPEAKER MAKES A SCORNFUL FACE)...we count on reliability, can I rely on the guy...not trust*

> *him...because trusting is more like a feeling or touchy-feely kind of thing...but reliability - is that soldier reliable can I count on him...is he dependable?(crew commander)*

Talking about trust in terms of reliability and dependability were much more comfortable for this individual. It is important to note, however, that there appeared to be little hesitation in discussing the more affective aspects of trust within the other focus groups.

> *You can trust their judgment when it comes to say, a work...a work environment, like they're making a call on a scenario that's happening, you...you can trust that. But when it comes down to say, how they're treating you specifically as people, and...and how good they know you, you might not trust them...(crew member)*

In general, however, there was clear evidence that believing a fellow teammate or leader to be genuinely concerned for the welfare of fellow team mates made people more likely to trust, and this issue was relevant both within team member relationships, and in the relationship between a leader and a follower. The focus groups provided several examples of how concern for others' welfare can be manifested.

Trust can be predicated on showing attention to the instrumental concerns of others within the military system. This may include, for example, a superior officer backing up and protecting a junior officer when actions are called into question. Another way in which leaders exhibit caring and concern about their crew members is by working to get their needs and preferences met within the military system. This may include, for example, getting their troops into courses that they want to take. Crew commanders noted that they deliberately work to get their soldiers what they want, in order to earn the trust and good will of their troops.

> *...with myself, I've got a trooper driver that's just came in from X Squadron...I don't know anything about the guy...you know...how's he going to gain my trust...how is that trust going to develop?...I'm going to work for him...like he wants to go for XX course...and hopefully by doing that I gain his trust...(crew commander)*

In this sense, it was clear that leaders actively work to promote trust by showing care and concern for the well being and the development of their soldiers. It is worth noting that both the crew member and the crew commander focus groups addressed this issue independently.

On a small team, showing concern can also involve listening to fellow teammates, and sharing the pressures of military life, such as being away from one's family and supports for extended periods of time. It is important to note, though, that this sharing of common experiences was sometimes problematic, particularly in relationships between crew members and their leaders. Within these relationships, perceived betrayals of trust impacted on the development and the progression of trust in leaders. Despite requests for confidentiality, several soldiers noted that their trust in the leader had been violated upon completion of operations, and that once in garrison, confidential information became known to other leaders, peers, and even to the military system as a whole.

> *Okay, for instance if...uh...you had a personal problem and you were talking to your senior about it...and then you wanted to keep it just between the 2 of you...and he runs off and tells all his seniors...next thing you know, you're up on some kind of a charge ...or...or...or everybody's informed. Yeah, that...that would be a personal trust issue...(crew member)*

> *Now, if we're in the field, and I'm hanging out calling you '(name omitted)', and we're all buddy buddy, and I start telling you 'you know, I got a problem at home' with this or that, or 'this at work is kind of, you know, bugging me', you know, it's all supposed to be as, you know, just 2 guys venting or talking, and then you get back to garrison and next thing you*

> *know you got the officer coming down with Sergeant Major, and they've completely ratted you out, bladed you. And now, not only do you have to deal with the problem at home you wanted to keep quiet, you got everybody sticking their noses into it, and then yelling at you because you're not telling them the whole story, when in fact, its none of their business to begin with...(crew member)*

In recounting these experiences, participants noted that they were now not willing to be open about their personal issues within the context of the relationship. While it may be possible to trust the person's competence to complete given tasks, the development of a trusting personal relationship with this person was argued to be very unlikely.

Crew members also argued that leaders' simple demonstration of concern was not enough. They also need to believe that their leaders are free of ulterior motives in showing concern:

> *A lot of them are interested in how they going to make themselves look interested in us...*
>
> *Ain't nobody interested in us. It's all about how they can make themselves look better, how they can achieve their goals, you know? All we are is stepping stones...and then they wonder why we're always pissed off (crew member)*

Exhibiting true concern clearly requires putting the needs of the troops above one's own goals of career promotion. Moreover, crew members need to believe in the positive intentions behind the concern expressed. Crew members expressed suspicion about the true benevolence of their leaders, and about the leaders' genuine concern for their well being at a core level. In talking about his leaders, one soldier remarked:

> *And then they always preach families this, quality of life that...and then they turn around and tell you right to your face 'I don't give a shit about your families, you're going to the [unknown]'. You know. And we got a lot of guys, single parents that have to take out $2000 loans so they can get people to watch their kids because they're going out for the weekend and doing the same crap we do all the time anyway. So, you know, if they want trust, and it's not even the small things I mean, it starts with small things, but are you going to trust right from the top to the bottom is gone. Because they don't give a crap about the soldiers at all. All they care about is them, up in their air-conditioned offices, playing on their computers while we're down---like they just removed asbestos from our hangar, and told us 'no, it's okay, you hang out in here'. It's stupid stuff that just shows they don't give a crap about the soldier at all. So there really is no trust in our area, no morale (crew member)*

Clearly, crew members' attributions about the true motivation of their leaders has the potential to hinder the development of trust within these crews.

It is important to note, however, that although concern for the well-being of others was argued to be important in some kinds of relationships, this need for an affective bond was less critical in other team relationships. In talking about other crew members, for example, one crew member argued:

> *I don't have to like you to work with you, I could think that you're the most stupid, idiotic complete ass I've ever met in my life...but if I know you're going to do the job well, and you're gonna watch my back...because that is your job...and I'm gonna watch yours....that's all the trust I need...I don't have to hang out with ya after work...(crew member)*

This suggests, as previous models of trust assert, that not all relationships within a work context will develop a high level of trust based on both cognitive and affective aspects. Not all relationships necessarily require belief in the positive intentions toward oneself. In some cases, trust can be based more on competence than on concern.

4.3.2.4 Integrity

Integrity was also noted to be an important predictor of trustworthiness. Although integrity was described primarily in terms of a leader's integrity, it was noted to be an issue in judging crew members to some extent as well. As in the trust literature, integrity was defined as honour, and to the match between words and actions.

Judgements about a leader's integrity (and hence, trustworthiness) were seen by crew members to be undermined by leaders' support for double standards. These standards made it possible for a leader who performed an act clearly in contradiction with operating procedures to go unpunished, while the same action performed by a crew member would have resulted in serious disciplinary action. Such double standards seemed to affect not just the level of trust in the leader (i.e., in the person benefiting from the double standard), but in the system as a whole.

Several examples provided relate to a lack of integrity (and hence trustworthiness) on the part of leaders. These included as accepting praise for jobs done by the crew, rather than by the leader..

> *A situation happened overseas, operational thing...where there was 7 guys, 6, 7 guys, mostly troopers, and an individual who was a higher rank than, than the troopers. Situation broke out, and in actuality the troopers took charge and dealt with the situation, whereas the higher rank really kinda went... "ughh...what's going on?"...but being that he had the highest rank, at the spot, he was an awarded (INCOMPLETE)...okay "you're the man", you're, you've got the rank, so "we're giving you all this commendation" and this and this, where the lower ranks who actually did the job going "what the hell"...and that's where integrity really comes in, and, and, everything 'cause, he knew...step up and, and and and say "I didn't do this, I don't deserve this"...and how...in my opinion...how can you possibly get a medal or take a commendation with your name on it for something that you never did (crew member)*

Clearly, an important part of integrity was fairness, and dealing honestly and fairly with other team members.

4.3.2.5 Predictability

The role of experience in establishing the predictability of other team members was also argued to be a key indicator of trust. The fact that crews worked interdependently in a variety of settings allowed them to observe the trustworthiness of other team members, and to see their ability to perform specific tasks. In so doing, team members argued that they came to be able to predict how their crew mates were likely to perform given tasks.

> *...the same way, you learn to trust ....you work with someone...you get to know them better, you get to know the way he's gonna do his work even before he actually does it, ahead of time (crew commander)*

It is important to note, however, that within the crews that we interviewed, the ability to predict other teammates was compromised by high levels of crew turnover.

> *But I think one of the biggest issues that I have, and I don't know if that's what you guys are looking for, maybe it's just a military thing, because they change the crews around so often, you're never safe. You know, you finally start getting used to working with 4, 8 people within*

> *your patrol, and then they'll pull somebody, add somebody else in, take 2 guys out, put 2 somewhere else. So as soon as you start to develop a bit of trust, knowing that you can rely on this person to do this, or you know that these guys are going to be there, or they're supposed to be there, because you rely on them to watch your back. And then when they move the crews around, mix and match, there's no cohesion in troops anymore (crew member)*

Clearly, predictability is a key to developing trust in another crew member or in a leader. As noted in the earlier trust review, the development of trust may well be correlated with the emergence of mental models about other team members. The issue of trust development as related to increasing predictability is an important issue to be explored in the future.

4.3.2.6 Motivation

An important attribute noted to impact on trustworthiness in the focus groups was the level of motivation shown by crew members. Within this context, motivation was framed in terms of initiative, such as willingness to learn or to ask questions if one is unsure about how to perform a given skill. Participants noted that a beginner on a new team may not have a high level of skills developed, but in a sense, can offset this through their motivation, through the quest to learn how to do better. As such, motivation is closely related (but not overlapping with) competence, or at least the desire to promote one's competence. This suggests that whether a teammate's ability to complete a given task is problematic depends somewhat on the perceived motivation and effort that this person shows.

4.3.2.7 Willingness to Accept Responsibility

A team member's willingness to accept responsibility was argued to be influential on judgements of trustworthiness. In some ways, willingness to accept responsibility is closely tied to the issue of showing motivation and initiative. More than this, though, willingness to accept responsibility was also expressed in the focus groups as willingness to take charge of the situation, in spite of risks, and even in the face of huge obstacles. In keeping with the quantitative results, focus groups also expressed that willingness to accept responsibility was particularly important for leaders. Ultimately, leaders must be willing to shoulder the burden of protecting all of the members of the crew.

4.3.2.8 Level of Responsibility Given

It was also clear from the focus groups that crew members also make decisions about trustworthiness in assigning responsibility for tasks to other crew members. A crew commander described a corporal asked to coordinate a battle check point (an inspection station for incoming vehicles) within his unit:

> *...what did he do?...he took the ones he couldn't trust, and he sent them off to the flanks in the cutoff vehicles...totally away...and he kept his group of eight that were in BCP...and you could see it, it was so obvious....the brand new troopers...where are all the new troopers?...they were off in the cutoff vehicles...he did not trust them to conduct the BCP (crew commander)*

This example provides evidence that soldiers who are not trusted by other team members are sometimes strategically placed in positions perceived to be less important, so that the risk of failing to perform the task has fewer ramifications for the rest of the team. In this sense, then, level of responsibility given can be argued to be both a factor affecting trust development (as individuals can only prove their trustworthiness if given the opportunity), as well as a consequence of trust judgements.

4.3.2.9 Communication

Communication was also noted to be an important influence on trust from several perspectives. One issue affecting trust in a leader is the openness of communication, in terms of the amount of information given to crews. In some the sense, the level of transparency in dealing with crews seemed to influence the level of trust in a leader. A leader who does not provide information may be less trusted (or even mistrusted), as they may be seen to be hiding something. The ability to share information about oneself (e.g. personal and family issues) was also seen as a critical component in trusting another person.

Another important communication-related issue is a leader's openness in dealing with ideas and/or criticism from the crew.

> *The big thing is knowing how to listen. If...if...if he makes a mistake, and we catch...catch it...like for instance, navigation...say he accidentally went on back there and we're supposed to be going forward...and we go "by the way [unknown]" or "Sargent, you're...you're travelling on the back there, and [unknown]"...or...or...you know, if...if they're open...if they're open to that as well at...from our level, as opposed to us being the only ones that are allowed to be open to criticism coming down from their level...it's got to be both ways (crew member)*

A trusted leader must be willing to listen to the views of others. It would seem from the focus groups that open communication between fellow teammates may also serve another function. To the extent that a leader or a fellow teammate had access to information which may explain poor performance, focus group participants argued that such performance many not necessarily adversely affect trust. If one knew what attribution to make (e.g. pressures at home detracting from performance), then trust may not be affected. These attribution processes, of course, can only occur as the result of open and personal communication.

4.3.2.10 Experience in Military Settings

Operational experience was recognized as a potential factor in trustworthiness, from at least two different perspectives. Operational experience is associated with the performance of discrete military skills needed to survive operations. In a sense, there is a presumption that a person within a given operation would have had to use these skills in order to survive. Moreover, to the extent that a person had been engaged in a number of different operations, this person had endured physical hardships and had dealt with the stress of operations (e.g. fatigue, sleep deprivation).

It is interesting to note that the extremity of the hardships and having endured the risks of specific operations seem to allow a higher level of presumptive trust. Individuals who have come back from Somalia, for example, are seen to be particularly worthy of trust and respect, as this operation was particularly difficult, and surviving these extreme conditions was argued to make one more likely to be trustworthy.

At the same time, participants also argued that people with high levels of operational experience were not necessarily more trustworthy, as even incompetent people could have a wide range of operational experience, and could be carried through by the team.

4.3.2.11 Experience in Other Settings

Within both the focus groups, and in the quantitative results, although experience in the military context was seen as influential on judgements of trust, experience in other settings (e.g. experience outside of the Army context, participation in sports teams) was not seen as particularly important. This presumably, is because experience outside of the military context does not necessarily lessen the risk for other teammates.

4.3.2.12 Physical Qualities

Physical strength, stature, and physical fitness were also argued to play a role in judgements of trustworthiness. Crew members who were particularly fit and strong were seen as more capable of helping rescue other team members in the event of an emergency, so they would be more likely to be trusted than personnel who were unfit. The appearance of a new crew member was argued to influence trust from several different perspectives.

> *I'm always looking at the 'what-ifs'. What if I get shot in the guts, or I get my leg taken off, and there's still, there's rounds coming in. I mean, this is the big picture. Probably never happen. Is he going to be able to bug me out? Is he going to throw me over his shoulder? Is he going to be able to take me out of there? I work hard everyday. I'm in fairly good shape. But at the same time, am I going to be able to lift him? You know what I mean? Let's face it, our job, you got to be fit. And I'm strong, but we've got some guys in our unit, well I don't think I could even get them out of there…(crew member)*

Having a new crew mate who is not physically fit presents a hazard in an emergency, either in holding back the rest of the team (e.g. by needing to be rescued), or by being unable to contribute to the safety of fellow teammates. Immediate judgements about the trustworthiness of a new crew member or leader, then, could be made very quickly on the basis of physical stature.

The issue of appearance, however, was also identified as impacting on judgements of trust. How crew members manage the practical duties of cleaning and caring for their uniform, and how reliably they perform personal grooming routines were argued to give important information about their motivation and ability.

> *Person 1…in all honesty, it always comes through in physical appearance. As far as trust goes, if he's not shined his boots, he's not pressing his epaulettes, he's not at his [unknown], that gives you, that gives you an automatic assumption as to…(crew member)*
>
> *Person 2: he's lazy (crew member)*
>
> *Person 1: yeah, he's not able to organize things. You know what I mean? Like, if he can't shine his boots, how's he going to operate the [unknown] (crew member)*

Lack of attention to detail, such as shining one's boots, is an indicator of a lackadaisical approach that may carry over to conducting one's duties, and may speak to one's respect for the position of a soldier. As such, dress as well as physical qualities influence judgements of trust.

4.3.2.13 Reputation

A person's reputation was also seen to impact on judgements of trustworthiness within the military crews that we interviewed. The power of reputation within the military system is likely due to the relative coherence and stability within the Army system. A person's reputation often proceeds them, as they move within that world, and this appears to be equally true of both crew members and crew commanders.

Word of mouth appears to be the most pervasive form of disseminating reputation. Reputation, for example, can be influenced by a person's participation in courses. The relative abilities of course participants are often discussed, and incoming personnel are known even before they arrive in a crew by the level of ability that they showed in the course. Past performance within the crew at a garrison, training, or operational level is also known, and information is distributed within crews and within the system.

> *The majority of people when the teams change are still within the squadron. We know these people. They're just coming into our crew from another crew. So, a lot of time with that, it's just, you've worked with them before, or you've heard stories from guys who have worked with them. So, that plays a lot into how you trust them...(crew member)*

A person's reputation, of course, can contain either positive or negative information. A person with a negative reputation may well have a great deal of difficulty being trusted when moving to a new crew.

> *Sometime people will come into the squad or something, and they'll be a bit of a problem child somewhere else. They don't always get, like...the reason why they're coming here is...well, let's give him a fresh start somewhere else. That problem will carry over, because this guy will talk to his new sergeant or whatever, and say 'oh yeah, this, this, and this'...right away, he's a pain. [unknown] on by word of mouth, and there's a lot of that that goes on here. Rather than, and so what happens is, the guy they sent over here, to give him a fresh start, to clean up, to try and salvage...salvage himself, to prove that...okay...he's not going to get that. And you can sit there and see it, all you want. Like you can sit there and see it. You know, the guy doesn't get a chance...(crew member)*

Although reputation can carry heavy influence, however, it is important to point out that leaders are aware of the need for some people with past difficulties and a highly negative reputation to get a "fresh start". Leaders told us that they sometimes deliberately do not review available evaluations or reports that may provide information about the trustworthiness (positive or negative) of a new crew member. There are deliberate efforts to suppress passing judgement on a person with a negative reputation, giving this person a reasonable opportunity to prove their trustworthiness within a new setting.

4.3.2.14 Rank

In the preliminary model of trust, rank was originally hypothesized to impact on judgements of trust. Rank was expected to be a potential indicator of trustworthiness, because rank was affiliated with higher levels of both experience and with the external or organizational recognition of a person's ability resulting in an increase of rank. Within the focus groups that we interviewed, however, rank was not necessarily seen as diagnostic of trustworthiness.

> *Just because he has a rack of medals on his chest, doesn't necessarily mean that he's a great leader. That just means he's spent his time overseas. He could have been camp [unknown]...he could have been sitting in camp (crew member)*

> *...rank doesn't have trust in it...you know, you might have a warrant who have 25 years in , but in your mind he's a complete moron...I don't trust him as far as I can throw 'm...right, but yet the sergeant who has 15 years in...I have all the trust in the world in him, because he's being doing this one job for the last 12 years...so just because he's a warrant or a sergeant or a lieutenant doesn't mean squat in the Army...it depends on the individual, not the rank (crew commander)*

The fact that non-commissioned members often serve in the same regimental system after promoted to a higher rank was also argued to impact on trust. Teammates sometimes have the experience of working with the same person as both a peer and as a leader who has power over them. The consensus seemed to be that a promotion in rank sometimes leads to a very different kind of relationship:

> *...it seems like, and not all of them mind you, but there are individuals which like we said, as individuals, as soon as they get in a position of power, boy that's it. Watch out. ... all of a sudden he gets master corporal, he gets sergeant, watch out. I'm telling you. You know, sure he's got the rank, but don't use that as push comes to shove, because you had the same rank as me once. Now that you've seen me, you got the promotion, now all of sudden, it's a whole different thing. So I think that...and not all of them, but that's another big issue too, because when they get promoted, obviously if get promoted, someone feels that you should be promoted and should be able to handle the stresses and responsibilities of that promotion. You start walking around yelling and screaming at people, because all of a sudden you have power...(crew member)*

A person who could be trusted as a NCM could not necessarily be trusted as an NCO. People moving from a crew member to a leadership position were seen as changing, and as turning their backs on their previous friends. This violation of trust initially established with an NCM (often at a personal level) is likely to affect the propensity to engage in trusting relationships, particularly with individuals seen as potentially being in line for future promotions.

4.3.2.15 Medals and Honours

It was expected that medals and honours would positively influence judgements of trust in other crew members, to the extent that they indicate recognition of ability from an external source. Focus group discussions, however, indicated that within the CF, medals are not necessarily given a great deal of weight in judging the trustworthiness of others. Within this system, medals are given to every soldier who completes an operational tour, regardless of the quality of their participation during the tour. This form of recognition is not necessarily indicative of a high level of trustworthiness.

4.3.2.16 Team Orientation

Within the focus groups, it was clear that the extent to which another teammate was seen as a "team player" had strong implications for trust. This includes having a positive attitude toward the team, and working to preserve the team. If another teammate could not be counted on to perform in the best interests of the team, even if this was not necessarily consistent with one's own best interest, this person could not be trusted. As noted earlier, this finding is consistent with the importance of team orientation noted in the quantitative results. Both crew members and crew commanders rated team orientation to be very influential in their judgments of trust.

From another perspective, each team creates its own dynamic, and team culture. This team culture will also influence the propensity to trust other team members. To the extent that trust within the team is valued, for example, explicit or implicit messages promoting trust are likely to be given. This may include norms or standards for how other members of the team should be treated, or even predictable rules which govern behaviour. This team culture, then, will influence the development of trust. Similarly, an important aspect of a team's influence is the extent to which team members are actively invested in being a member of the team, and the extent to which they identify themselves as team members. In the trust literature, identification is hypothesised to influence the development of trust, and team identification is likely to play a major role in these contexts.

Similarly, one would also expect that team diversity would impact on the development of trust. This diversity may include differences in expertise or training, or diversity in life experience or cultural background. There is clear agreement in the literature that team diversity will impact on trust.

Contextual Factors

Several other factors related to the nature of the task, the situation, and the operational context were argued to influence judgements of a person's trustworthiness.

4.3.2.17 Nature of the Task

Put simply, the extent to which a person is expected to be trustworthy can depend greatly on what this person is being asked to do. If a person known to have highly developed tactile skills, but poor navigating skills, asking this person to complete a task with a high degree of navigational acumen will give rise to very different predictions about trust than if asking to design a mission scenario. A humourous example provided in the one of the focus groups

> *...like XXX (person named), I would depend on him and rely on him for tactics...not a problem.....but there's no way on earth I'd let him touch my computer.....(laughter)...(crew commander)*

As such, the nature of the task will influence assessments of trustworthiness.

4.3.2.18 Situational Antecedents

Several situational features were seen as being important influences on trust, and on the need to trust within small military teams. Clearly, issues of trust come into play more in very risky and stressful situations than in less stressful situations. Focus groups participants talked about risk, vulnerability and uncertainty as being important determinants of the need to trust other members of the crew. Stress, risk and uncertainty, in a sense, raise the stakes, and heighten the need for competent performance, and the need for trust when working interdependently.

> *...when it comes to any safety issues or something like that, you're not going to take someone that you don't trust to conduct that specific task (crew commander)*

Moreover, the focus groups also argued that the need for trust can also be an impetus to re-examine the traits and behaviours of the trustee in a more detailed way. Faced with uncertainty, then, one recognizes that they do not have the information needed to make confident predictions about another person's ability to perform in a trustworthy way, and these issues are attended to with more urgency and in more detail. As such, the need for trust is both a direct impact on trust expectations (to the extent that these expectations have been formed) and also an indirect impetus to either begin or to revisit the trust development process.

4.3.2.19 Operational Context

The vehicle crews that were interviewed operate primarily in 3 settings. These include garrison, when no major field training is occurring. Field training occurs a few times a year, and consists of simulated operations. Such training can occur up to a month or two at a time, and involve performing many of the same skills performed during operations.

Perhaps the most surprising (and very consistent) finding during the focus groups was the role of operational context in determining both the scope and the quality of trust judgements. It was clear from the focus groups that not all judgements about the trustworthiness of other crew members are given equal weight, but that the context in which operations are performed will greatly determine the nature of trust judgements.

In garrison, participants argued that it was clearly possible to form impressions and judgements about the likely level of trustworthiness of other team members. The form of trust that develops in garrison, however, was clearly argued to be an inadequate form of trust. Tasks that are performed in garrison are completed in a fairly sedate environment that is far removed from the stress, risk and chaos inherent during actual military operations. Task performance within the garrison context is not necessarily diagnostic of ability to perform in a much more chaotic environment, or of the ability to perform more complex and demanding tasks.

> *I mean, you'll get someone who's promoted to an NCO's position, and they shine in garrison, because all they got to do is dictate. You know what I mean? Do this. Do that, do that. Anybody can do that. That doesn't show anybody you can lead. That shows you can tell someone to do a job. Now, when you get to the field, that same individual who can tell from garrison who looks phenomenal on paper because he's got everybody going all this, as soon as you put him in a vehicle, you give him a map or you give him this, you tell him to...he's a) completely unfit for the job he's doing, he doesn't have a clue what he's doing. He gets in the field, and he's a complete idiot. So then, the senior corporals, have to, okay know so-and-so, here's the map, here's where you think we are.*

Competence within garrison does not necessarily imply competence in operations. Moreover, although garrison life requires a number of tasks also performed in operations, there are still a wide range of tasks and competencies that cannot be observed in garrison (e.g. organization of one's kit in the field). As it is impossible to gauge competency on these tasks in garrison, it may be difficult to fully develop trust.

On the other hand, how crew members and leaders behave on training exercises are argued to be somewhat more reliable indicators of trustworthiness. Within field exercises, exposure to other people provides the opportunity to sample a broader range of behaviours and to observe them in a wide range of circumstances, while completing a broader set of more complex tasks.

> *....in the field, things happen faster....living together...my crew if there was 4 of us, we would be in the same tent, same vehicle 24 and 7, you know...they would not do anything without me knowing about it, and I'd know everything they'd done...in that type of lifestyle, you can find out who's doing what...and ahh....who can be trusted and counted on...(crew commander)*

In the field, there is also more opportunity to interact and to share experiences at a personal level, to work as a team member, and there are more opportunities to see a teammate's ability to work under pressure while managing risk and uncertainty. Even so, the training nature of these field exercises and the fact that they are only simulations still makes it impossible to gauge trust adequately.

Only in actual operations, where actions are no longer hypothetical, and the work is real can trustworthiness be adequately assessed. It was clear that fully developed judgements of trustworthiness can only be formed with a considerable amount of information and experience in high stress, high risk contexts. Engaging in operations with other team members provides both concentrated experience both performing operational skills, as well as dealing with adversity and stress.

> *...you get a new guy, his reputation ain't gonna carry on through, his dress and deportment ain't gonna carry on through, as your opinion...in all honesty, if you wanna know how somebody works, go out in the field for 3 days...you'll spend 2 months in garrison or 72 hours in the field, and you'll find...you'll get the same answer as to how somebody is.*

The importance of interacting within an operational context in order to adequately get an accurate gauge of the trustworthiness of a crew member or a leader, based on how they handle operational situations, was evident in all 4 focus groups.

4.3.2.20 Organizational/Team Factors

The focus groups also showed clearly that trust within teams is also influenced by broader organizational factors. Within the small armoured teams that we interviewed, trust within the team (and the very motivation to enact trust) appeared to be very affected by the levels of trust (or distrust) within the military system as a whole.

It is also important to note, for example, that several soldiers also indicated that the very recruitment process by which they entered the Canadian Forces also betrayed their trust. Several focus group participants indicated that they enlisted in the Armour Corp because they were told by recruiters that no other arms were available, only to later find out from other recruits that this was not the case. As such, their very future within the military began with their trust in the honesty of the recruiters being betrayed. We argue that these systemic trust issues are likely to have a serious impact on the development of trust even within a small team.

At the same time, however, it was also clear in the focus groups that often leaders face what is, in some ways, an impossible task in attempting to build trust and goodwill with the crew members that they command. Direct leaders are in a difficult position, and can also face conflicting demands. On one hand, they are representatives of the broader military organization, and are charged with protecting the interests of this organization (Dirks and Skarlicki, 2002). On the other hand, as a direct leader, they also have a duty to protect the interests and guard the well-being of their soldiers. When these demands conflict, there may well be no way for a leader to satisfy both parties. As one crew commander argued, by the very nature of the position that he occupies, he is bound to break trust with his soldiers from time to time. Factors that stem from the organizational structure are also likely to impact on the development of trust, and need to be considered in modelling trust within teams.

Several other team factors are also likely to impact on trust development. The form of training that teams receive is also likely to influence the development of trust. Within the crews that we interviewed, for example, although individuals do assume specific roles within the crews, all crew members are trained to perform the work of other crew members. This cross training has the potential to influence the development of trust both positively and negatively. Crew members with the ability to perform the tasks of other crew members (due to cross training and/or previous experience in performing the role) may well be better judges of proficiency. As such, their standards for trustworthiness may be more highly developed with respect to a given task. In addition, to the extent that team members who are cross trained can predict the actions of others performing a similar job, having a clear sense of what other crew members are likely to do in performing their role may facilitate trust.

4.3.3 The Trust Development Process in Small Teams

Most aspects of trust development process identified within the focus groups matched the basic process of trust development laid out in the preliminary model and in existing theoretical views of trust. Several specific themes emerged during the focus groups.

Trust develops over the course of time. The development of trust within teams is iterative, and occurs as the result of prolonged experience and interaction:

> *I think trusting your crew comes with time. The more about know about...the more you know about how they work, the more...the more the trust is gonna be within that small group...the more effective on your job you're going to be. If your constantly bouncing around with new people...learning how...like...I might know how...uhh...[name] works really well...and we might work really well together...and because we know how each other works, we...we get things done accomplished...and then I move on and I'm in his crew now [presumably pointing at another soldier]...well now we have to figure out how each other works...(crew member)*

Within small military teams, then, the development of trust takes time and experience. A key aspect of this is learning how another team member is likely to work, and to begin to anticipate this person's behaviour. Clearly, time allows for increasing opportunity to observe others perform a wide range of skills in varying contexts. Time allows for predictability to develop. In this sense, the description of trust development in military teams is very consistent with trust as described in the existing literature.

Trust development involves hypothesis testing. An important issue noted in the literature also evident within the small armoured team context is the issue of "hypothesis testing" (e.g. Rempel, Holmes and Zanna, 1985, Lewicki and Bunker, 1996). Put simply, this refers to the fact that teams actively work to gauge the trustworthiness, particularly of new team members by providing "tests" which they must perform. Crew commanders, for example, described deliberately designing tests in order to gauge the trustworthiness of their crew members:

> *...how do I gain trust in him? well...I do that by inspections....I grab the ORL's and I walk down to the floor and I look at it and he says ok he checked his electrical socket and he checked and he checked for operation, condition, lubrication....I open it up...packed full of mud....right clear full of mud...close it up... I lose my marbles...I don't trust this guy.....this guy cannot move now...(crew commander)*

This way of gauging trustworthiness, then, involves double checking the vehicle maintenance checklist completing by the new crew member. Ability and motivation to complete these tests is an indicator of the likely trustworthiness in the future. Failed tests, on the other hand, lead to diminished judgements of trust.

Moreover, trust between a leader and a follower is also built by tailoring the complexity and the difficulty of the task to the skills of the crew person, starting with tasks at which the new crew member is likely to succeed, followed by increasingly difficult tasks. As a crew commander recounted gaining the trust of a superior officer:

> *...he gave me tasks that I could accomplish at my level...but if he were to give me taskings that were up above the level that I could do...but because he knew my capacities...there you go...he made me do things that he knew I could do...(crew commander)*

In this sense, trust development can be based on an almost systematic form of hypothesis testing with increasing levels of difficulty, and is predicated on both the leader's knowledge of a crew members' skill level, as well as on the successful performance of progressive skills.

Trust development is influenced by contextual factors. The focus groups also provided support for the contextual nature of trust. It is critical to consider both the person and the context in which this person exists in order to make proper judgements of trust. Focus group participants also depicted the contextual nature of trust from several perspectives.

> *I think there's different levels of trust...trust too. There's trust in your peers, there's trust in your...your, your subordinates, and your superiors. And then there's also trust of knowledge...how, how well that person knows his job as opposed to him just being a person and how much you trust him as a person. It...it...like ummm...you might not necessarily hang out on your off time with the people in your crew, so you might know them, and trust them as a person...but when it comes to their job, they're well skilled, and they know their job quite well, you'll trust...trust them in their job, but you might not trust them with something else. So there's different levels of it. (crew member)*

Secondly, trust in another person can be very specific to the domain in question, and trust in one domain does not necessarily generalize to other domains.

> *You can trust their judgment when it comes to say, a work...a work environment, like they're making a call on a scenario that's happening, you...you can trust that. But when it comes down to say, how they're treating you specifically as people, and...and how good they know you, you might not trust them as much there...(crew member)*

Similarly, the kind of competence needed to promote trust in garrison was very different from what would be needed in actual operations. Although this depiction of trust is present in the existing trust literature (Mayer et al, 1995, Jones and George, 1998), the interactive nature of the relationship between qualities of the trustee and contextual factors does not appear to exist explicitly in current models of trust development.

The focus groups clearly showed that trust develops differently in different kinds of relationships. Whereas some relationships may have relatively higher forms of trust, including both cognitive and affective components, this is not necessarily the case. In this sense, trust as seen in the focus groups was consistent with views of trust in the workplace, presented by Lewicki and Bunker (1995 and 1996). It is possible to see a teammate or a leader as having all of the competence and as being worthy of trust within the work domain, but not have any trust in this person's concern toward oneself in other contexts.

It is also important to note that the focus group participants did not describe the wholly unconditional forms of trust paralleling "faith", as noted in the literature. In fact, such faith seems rather elusive within these contexts. There are a number of possible explanations for this. First, it is possible to speculate that because of the constant danger of cracking under the pressure evident in very high risk situations, there may be little adaptive advantage in conferring unconditional trust. It may also be the case that developing trust to this level may be particularly rare, and may develop in only a few of the many relationships within a given team. Lastly, it may be that it is simply not possible to elicit descriptions of such relationships within a larger setting such as a focus group. This issue requires further exploration.

Moreover, focus group participants argued that it was impossible to make an adequate judgement about the trustworthiness of other crew members without being together both in the field during training exercises and in the course of actual operations. At this point, a crew member learns what to expect, and has increased comfort and confidence concerning what their fellow crew members are likely to do. Focus groups agreed that more highly developed trust takes both time and the opportunity to work in specific contexts in order to build.

Trust is reciprocal. Another issue that the focus groups made clear was the reciprocal nature of trust, the fact that trust within teams was not the product of unidimensional relationships from crew member to crew member or from follower to leader. Rather, trust is actively promoted by both participants in a given relationship:

> *...in the field, my driver and my gunner, because...not so much my gunner, but my driver...was striving to earn my trust....I could see it..you know...he wants me to be able to depend on him, and to get off his back...because I'm a kind of a hard guy, you know...I'm gonna stay on ya until you prove to me that you're doing your job and I can rely on ya...at that point, then I'll back off ...and you know what you gotta do now (crew commander)*

> *I think the trust thing is more...you know...one, you have to get to know the guys and they have to get to know you and they have to be able...you know...once they perform and do a couple of the menial tasks that you know they can do then you're going to trust them, and in the same token if you don't look after them and look after their welfare and their being, then they will not trust you whatsoever(crew commander)*

This reciprocal nature of trust, although described in early trust literature (e.g. Zand, 1972) has been described only in recent models of trust (Brower et al., 2000). In order to model trust within a team setting, attention needs to be paid to this issue.

The trust development process described in Rempel, Holmes and Zanna (1985) seemed to hold true within the military teams that we interviewed. At the early stages of relationships, crew members do not simply suspend their judgements about the trustworthiness of a new crew members. Instead, they make initial judgements about the likely trustworthiness of this new crew member, based on the information which they have available at the time. Members of small military teams appear to constrain their judgements and to limit the scope of their judgements as being applicable only to garrison life. These constrained judgements are also not mistrust or distrust, in the absence of proof to the contrary. Rather, these judgements about trustworthiness of other teammates appear to be made with the recognition that they are incomplete, and may only be applicable within a very limited domain (e.g. applicable to garrison only).

Trust development involves increasing attributions about other team members. Small team members also described the development of trust as equated with an increasing level of attributional abstraction. At the early stages of team relationships, judgements about the trustworthiness of other team members (or team leaders) are formed based on the observation of a person's behaviour in a specific task and context. At the next stage of trust development, however, judgements extend beyond behaviour, and are increasingly based on the attribution of behaviour. Both crew commanders and members explicitly described the important role of attributional processes in making judgements about the trustworthiness of others. Crew commanders provided several examples of having to understand the reason why a soldier had committed an infraction of the rules before knowing what consequences they needed to impose, or whether they needed to adjust their expectations of trust toward this person. If a reasonable explanation could be given, even a violation of trust would not necessarily impact on their judgements of the core trustworthiness of the violator. Presumably, a broader set of attributions about this person's disposition buffered the impact of a negative action, and some basis of trust in the person's broader motivations and intentions allowed for trust to be maintained even after a violation. Attributions about the motivations and intentions of other crew members and about the reasons for their actions play a key role in how behaviour is interpreted, and in how trust is conferred.

As a whole, the trust development process described in the preliminary model matched very well with the processes identified by members of small military teams. The role of time in forming judgements about the trustworthiness of other crew members and leaders, and the fact that small military teams deliberately use hypothesis testing in order to gauge the abilities and the trustworthiness of other team members were both independently described by the armoured vehicle crews. The reciprocal nature of trust, the important role of context, and the importance of attributional processes in understanding others' behaviour also played key roles in their descriptions of trust.

4.3.4 Refining the Model of Trust Development in Small Teams

The focus groups provided a good validation of the model of trust development from several perspectives. First, and most importantly, the description of trust within the focus groups was very consistent with the proposed conceptualisation of trust. The issue of context does play a critical role in judgements of trust, and both trust expectations and trust behaviours stem from consideration of the qualities of the trustee, combined with the contextual factors at play when trust decisions are made. Secondly, the focus groups also validated the factors proposed to influence the trust development process, as reflected in both existing trust literature and in the preliminary model of trust. Competence, concern for others, integrity and predictability, all prominent in the trust literature were all rated as influencing judgements about trustworthiness by focus group members. Lastly, the process by which trust was hypothesized to develop also received support.

On the basis of these focus groups, then, it is possible to define a number of revisions to the factors depicted in the preliminary model.

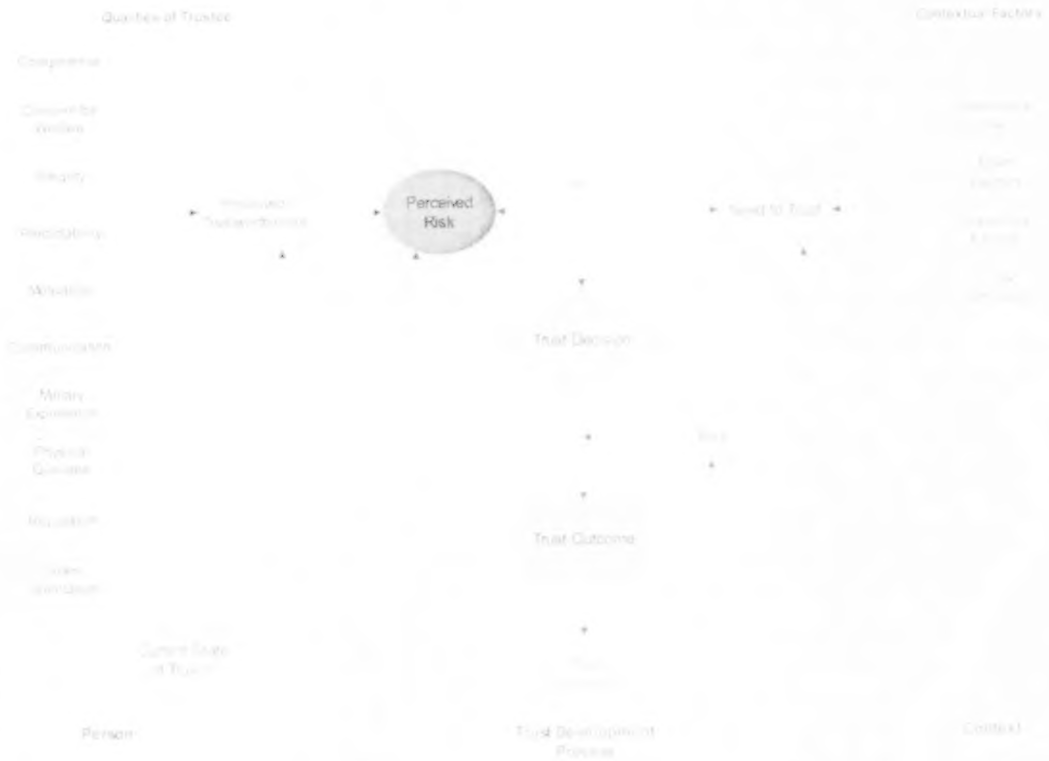

Qualities of Trustee
Contextual Factors
Competence
Concern for Welfare
Integrity
Predictability
Motivation
Communication
Military Experience
Physical Qualities
Reputation
Perceived Trustworthiness
Perceived Risk
Need to Trust
Trust Decision
Risk
Trust Outcome
Current State of Trust
Person
Trust Development Process
Context

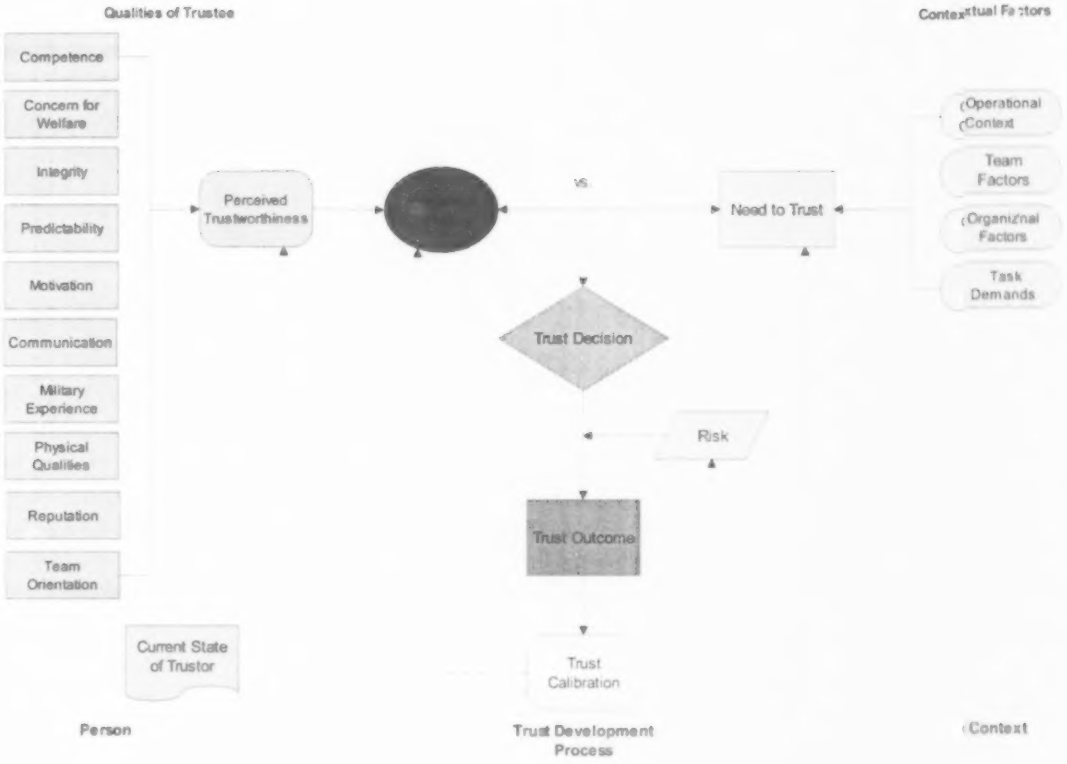
Figure 13. Final model of trust development in small military teams.

First, the factors hypothesized to impact on the development of trust expectations were changed to depict discrete entities, rather than being grouped into sets of factors. This change will assist in clearly delineating the factors for model validation and measurement efforts to come.

A number of factors identified in the preliminary model of trust in small teams either did not receive attention as influences on trust in the focus groups, or were argued to have a very minor impact. The issue of rank and medals and honours, although discussed in the focus groups, were seen to be less important in determining judgements of trust.

Two factors received only minor consideration during the development of the initial model, but received prominent emphasis during the focus groups. These include the role of reputation and the importance of dress and appearance as indicators of trust, even without personal contact. In addition, issues of motivation and willingness to accept responsibility also received a good deal of support as being influential in judgements of trust. As these factors are closely related, they have been combined in the final model.

The specification of several key contextual factors likely to impact on trust also altered the model. The role of operational context was the most prominent factor identified, and allowed a refinement of the preliminary model to specify the operational context as an important factor influencing trust development in small teams. Trust within the military system as a whole also seemed to affect trust within team relationships, particularly trust between a follower and a leader. Based on this, and on


Qualities of Trustee
Contextual Factors
Competence
Concern for Welfare
Integrity
Predictability
Motivation
Communication
Military Experience
Physical Qualities
Reputation
Team Orientation
Perceived Trustworthiness
vs.
Need to Trust
Operational Context
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Task Demands
Trust Decision
Risk
Trust Outcome
Current State of Trustor
Trust Calibration
Person
Trust Development Process
Context

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Despite the high level of consistency with existing views of trust development, however, the information provided by the focus groups and the update of the newest trust literature both suggested new ways of thinking about the trust development process within small teams, and prompted several revisions to the trust development process identified in the preliminary model. There are several key differences between the old and the revised model, in terms of the trust development process.

The first revision to the trust development model is the distinction between actual risk and perceived risk. In this model, actual risk is a product of factors external to the individual. Perceived risk, of course, is the individual's subjective experience of risk. This distinction is, of course, not new to models of trust (Brower, Schoorman and Tan, 2000). Nonetheless, this distinction does formalize the assertion that risk is only likely to impact on judgements of trust (or trust behaviour) to the extent that this risk is experienced by the individual. If the individual does not see the risk in a given situation, they are unlikely to adjust their trust decisions to compensate for the risk. In the revised model, risk moderates the relationship between a trust decision and the outcome of the trust decision. This argues that to the extent that risk actually exists, it will also affect the outcome of a trust decision.

Secondly, the addition of a discrete need to trust is intended to depict the situation of an individual facing a trust dilemma. On one hand, this individual's ability to trust will be determined by the perceived risk within the situation. High levels of perceived risk will obviously make trust a more pressing need. Perceived risk can be seen as a relatively more internal process which is specific to the individual. The need to trust, on the other hand, is conceptualised more as an external factor that is the product of external influences, depicted here as a product of several contextual factors including the operational, team, and organizational context. Within a given organization, for example, the need to trust is dictated by the demand to work cooperatively. Given a work situation in which the pressure to complete a given task demands interdependency, the need to trust is much higher. Similarly, within a team in which trust is highly valued and expected, the need to trust other teammates will also be more prominent. At the same time, however, perceived risk is also prominent. In a sense, then, decisions about whether to trust fellow teammates represent a "balancing act", in which the individual must gauge both their perceived level of risk in the situation and the pressure to enact trust from external forces.

This tension between the need to trust and perceived risks of trusting leads to a trust decision. In the trust literature, this decision is often called risk taking in the relationship (e.g. Mayer et al., 1995). As noted earlier, this decision may be manifested in either changes in trust at a psychological level, for example, by altering one's attitudes and beliefs about another team member, or as an observable choice behaviour which indicates trust. As the trust literature appears to be moving toward emphasizing the importance of trust as a psychological state, we would also argue that trust decisions can be manifested either only a psychological state, or as a psychological state combined with choice behaviour, as choice behaviour on its own can be very difficult to distinguish from behaviour linked to other states or intentions.

The trust in teams model also depicts a trust decision as leading to a trust outcome. Again, we would argue that trust outcomes would tend to vary in their discreteness, and the intention is not to imply that every trust decision will necessarily lead to an immediate, discrete trust outcome. In fact, one may make several different trust decisions without there being a discrete outcome.

Lastly, a trust calibration process has been added to the model. At this stage, the individual compares the result of the trust with the expected result, and needs to make a decision about whether or not to adjust the various factors which impact on their trust. Potential trust calibration processes are indicated by the dotted lines in Figure 13. These processes include:

- Calibration of perceived trustworthiness – When the outcome of trusting another person is positive (i.e. trust is rewarded), for example, perceived trustworthiness is likely to rise accordingly. This may occur either with changes in one's perceptions of the qualities (e.g. a person is seen to be more competent), or in the summary judgement of perceived trustworthiness.
- Calibration of perceived risk – When trust is rewarded, the perceived risk inherent in future trust judgements is likely to diminish.
- Calibration of risk – When trust is rewarded, this might be evidence that the actual risk in a given situation or relationship is also lower in the long term.
- Calibration of need to trust – When trust is rewarded, this may lessen the need to trust. If one has made a trust decision within a fellow teammate, for example, this decision may assist them to work interdependently without further trust decisions mandated by the organizational context.

If one's expectations are not met, adjustments in either one's perceptions of the abilities of their teammates, in the contextual factors which impact on their trust, or trust expectations themselves will need to be made. If a trustee fails on a particularly complex task, for example, it may not be necessary to change one's core expectations about this person. Clearly, the role of making attributions about the trust outcome will play a key role in how and or whether trust develops.

An additional aspect of the revised model is the shift from propensity to trust to the inclusion of the current state of the trustor as influencing the development of trust. Although propensity to trust is ubiquitous within trust theories, either the current measurement or the very conceptualisation of propensity seem to be lacking, as it has rarely been shown to have a prominent effect (Holmes, 1991). Although an individual's current state will likely be influenced by a global propensity to trust, this propensity to trust is also variable, and depends, for example, on a match between situational constraints and personal preferences. As such, we propose a more diluted form of the individual's current state as impacting on trust development. This addition is also in keeping with developing research that depicts trust development as impacted by self-perceptions (Ferrin and Dirks, 2002). An individual's current state will be affected, for example, by one's current goals and even one's mood. An individual's current state will influence whether this individual sees the situation as a risky one at all (e.g. perceived risk), as well as whether the individual sees the situation as requiring trust (need to trust).

4.3.5 Overview of Findings

In general, the information gained during the focus groups suggested a fairly good match between the factors seen to influence trust within small teams in the focus groups and the questionnaire ratings. The match between the quantitative ratings and the importance given to several factors in the focus groups were not always entirely congruent. The prominent factors of competence, concern for others, and integrity were expected to play perhaps the most influential role of judgements of trust, in keeping with the existing literature, and in keeping with frequent mention of these factors during the focus groups. The quantitative ratings, however, rated these 3 factors relatively low. On the other hand, some issues discussed as having an important influence during the focus groups (e.g. reputation) received relatively low ratings of importance on the quantitative measure. It may be difficult to extrapolate from such low sample sizes. The sample sizes used in this study are very small, in order that we would have adequate time to explore the issue of trust within teams. From a qualitative perspective, this decision helped to allow more time to explore the issue of trust in depth with the armoured crews that participated in the focus groups. On the other hand, such small sample sizes limit the ability to make strong inferences in the quantitative data. In the end, we believe that the richness of the qualitative data, and the understanding of trust issues showed by the small military team members amply justifies the compromises of sample size.

The lack of distinction between ratings of the importance of various qualities in given positions (e.g. gunner, drivers and surveillance operators, crew commanders) may be, in part, indicative of the team structure, and of the cross-trained nature of the crew. As the role occupied by a given team member is more a product of a temporal assignment (rather than an established role), there is little need to make distinctions between these dimensions in judging trustworthiness.

In describing trust in leaders, discussion tended to focus as much or more on the absence of trust, as much as on trust from a positive perspective. As such, the model was developed, in some part, by working to apply the positive pole of the attributes described during the focus groups to the developing model. Fortunately, there was also considerable discussion of the positive aspects of trust within teams that seemed to support the inclusion of specific factors. Whether trust is conceptualised as a single bipolar dimension, or two distinct constructs (trust and distrust), each with highs and lows, however, is an issue that will need to be resolved in future work and theory.

The content of the focus groups was primarily dominated by discussion of trust in a leader. This was likely due to the status of trust in leaders within these teams, and the fact that an open forum unintentionally offered an opportunity to discuss their frustrations with leaders in addition to the intended target, trust in team relationships generally. Nonetheless, when the focus did turn to trust in crew members, trust in crew members was depicted as being affected by the many of the same factors as was trust in a leader. In describing the trust of a follower in a leader, however, there are obviously more factors that are likely to come into play (e.g. authority) than in other relationships. There was little evidence, however, that the experience of trust or the primary antecedents of trust were qualitatively within these two kinds of relationships, or that the process of trust development differed.

In general, both the focus groups and the questionnaire interviews suggested that, on average, person-based factors played more of a role in judgements of trust than did category-based factors. Despite the fact that military teams function very much in a world of categories (e.g. hierarchy and well-defined roles), this finding is not surprising for several reasons. First, in the previously formed teams that we interviewed, team members would have had the opportunity to develop very clear views of the abilities and motivations of other team members. This prolonged exposure to rich sources of information may have diminished the importance of categorical factors, which provide only sparse information. Similarly, as the teams that we interviewed were combat teams who have experienced high levels of risk as a team, another finding in the social psychological literature may also help to explain the prominence of person-based factors in determining judgements of trust. When a perceiver's own outcomes are dependent in some ways on another person, the information relating to this person is processed with more effort, and processing style also puts more emphasis on personal characteristics than on categorical features (Neuberg and Fiske, 1987). It is difficult to imagine a relationship that is more outcome dependent than the one between members of a combat team. This may also have influenced the dominance of person-based factors. This analysis suggests that person-based factors will dominate within teams with direct leaders. This may not be at all the case, however, in teams where the leader has more of an indirect relationship with crew members. Trust in indirect leaders is likely to be more influenced by categorical factors than was evident within the armoured vehicle crews.

The apparent bitterness on the part of followers within the focus groups (as evidenced in some of the focus group quotes) should also be addressed. Soldiers' views of their leaders could well have been coloured by an impending upheaval within the organizational structure. During a time of organizational change, for example, it may be very difficult to separate their dissatisfaction with the system from dissatisfaction with direct leaders (Dirks and Skarlicki, 2002). It should be noted that the apparent levels of distrust between crew members and leaders is also likely to be influenced by a variety of social processing biases, which are particularly likely to exert themselves within the small combat team context. As a recent description of trust in leaders argues (Dirks and Skarlicki, 2002), leaders are in a very difficult position when striving to create and maintain trust. Because of the salience of their position, their actions (both positive and negative) are under a much higher level of scrutiny than is the case in more equal relationships. Within a small armoured crew, living together for 24 hours a day, 7 days a week, every person is liable to act negatively toward others, to violate their expectations, and perhaps even to break trust. Due to a leader's salience, however, these actions not only more likely to be attended to than would otherwise be the case, but may also be interpreted differently, as a result of the stereotypes used to understand leaders. Physical pushing another crew member in an act of sheer frustration and fatigue, for example, is likely to be interpreted very differently when the act is performed by a leader than by a crew member (e.g. Kunda, Sinclair and Griffin, 1997). At the same time, research also suggests that negative actions (e.g. perceived violations of trust) will be better remembered and given more attention than will positive actions (e.g. confirmations of trust). Once established, hypotheses about the trustworthiness of a leader will be promulgated, even in the absence of direct evidence or current violations of trust, and even neutral behaviours can be attributed to hostile intentions. In a small military team, where being together in operations with high levels of stress and fatigue, these biased forms of information processing are perhaps particularly likely to happen. This, of course, does not make the problems of trust within the crews that we interviewed any less real, but provide some support for the assertion that such problems do not necessarily stem solely from the actions of these specific leaders.

As a whole, then, the revised model makes several unique contributions to the developing trust literature. First, and most importantly, it is the first model specifically designed to understand trust within small military teams, The model stemmed first, from both early and more recent existing trust theory and research, followed by successful efforts to informally validate the model by working with members of armoured vehicle crews. Moreover, this model introduces several unique contributions to the literature. It clearly introduces the importance of context as a key determinant of trust development, in terms of team milieu, the operational environment, and the broader organizational context. These contextual factors, although recognized in the literature, have yet to be elaborated in an actual model.

To its credit, the proposed revised model also sticks to the lowest possible level of abstraction rather than using high order concepts as much as possible. Although the ultimate goal of any model is to explain a construct at the highest possible level of analysis, we have argued that the early stages of model development work at the lowest possible level of parsimony possible, in order to be certain that the constructs used to build the model truly represent the dimensions of interest. At the same time, however, it will also be important to grapple with the newer trust research and theory, in order to gain maximally from work that has been done with higher order concepts.

4.3.6 Limitations of Current Work

By its very nature, however, this work is limited in its focus on armoured vehicle crews within the Army. We would argue that although this work is likely to be relevant to military teams with similar features, the factors identified in this report are likely may vary in the strength of their influence in other contexts. Although trust is likely to be similar in other small military teams, this may not necessarily be the case, but seems likely to be similar especially for combat teams. As such, it is important to note that applicability in other contexts may well be high, but should not be assumed.

In addition, there were also some indications that the small teams that participated in the focus group may not have been typical of all small military teams. Put another way, it is possible that several distinctive factors may have played a role in how trust develops within these teams. The fact that the teams were cross trained, for example, has the potential to impact on trust. The negativity of some of the comments within the focus groups, for example, suggests that morale within the unit may be lower than in most small military teams. As noted earlier, the crews that we interviewed belong to a regiment undergoing a significant organizational change, and the normal level of morale may be somewhat compromised for this reason. If this is the case, it may be that trust in direct leaders of these small teams is compromised as a product of trust in the system as a whole being compromised. Whatever the origin, however, these crews may not present an accurate depiction of trust between leaders and followers on average, or of the status of trust as a whole within the CF system.

Models work to simplify complex phenomena, and the model presented herein is no exception. It is important to note that many other factors likely to influence the development of trust in small teams could not be given adequate attention, either during model creation, or even in the limited time available in the focus groups. Several factors which we expect to influence judgements of trustworthiness to a somewhat lesser degree could not included in the model of trust in teams, in order to keep the model at as simple a level as possible. These include attitude of the trustee, and the stereotyped group to which a trustee belongs. In addition, we would also expect values and goals to also play a role in judgements of trust. In terms of the contextual factors, to this point, we have discussed only a few specific factors within each contextual feature likely to impact on trust judgements. In the case of operational context, for example, we have argued that whether teams are in garrison or in the midst of actual operations will influence both the depth of trust decisions made, as well as the perceived utility of such decisions. Factors related to the team context are also in need of further exploration. Among the former, team configuration is likely to play a role. The size and structure of the team, the leadership structure within a team (e.g. fixed or adhoc leader) are all likely to impact. As well, diversity (e.g. of expertise, culture, etc.) are also likely to impact on trust development. In a broader sense, the team context is also likely to be affected by team identification, by the extent to which team members actively see themselves as joined by a common goal, and the team milieu around trust. Lastly, although the issue of leadership style is evident in the literature, this issue was not explored in detail in this work. The relationship between various leadership styles (e.g. transformational vs. transactional) will be important to consider in future research. Hopefully, as this work extends, it will be possible to incorporate many of these factors.

4.3.7 Refining Methods to Study Trust

The information gathered during the focus groups was both rich and informative, and we were surprised by the apparent ease with which members of military teams discussed issues of trust, and by the complexity of their ideas. In general, the fact that time was fairly limited was evident in each of the focus groups. It would easily have been possible to spend the entire day with any one of the teams. Nonetheless, we believe that we did achieve a good sample of the issues likely to influence trust within small military teams. Considering the future trust in team work that will need to happen, however, this research also flagged a number of potential problem issues that will need to be solved in future efforts to understand trust in teams.

Our experience in conducting the focus groups suggested that the decision to interview crew members according to position (e.g., gunners, drivers, surveillance operators, and crew commanders) rather than as intact crews was the appropriate one for several reasons. First, having focus groups configured in this way allowed for the separation of NCM's and NCO's. Based on the issues of trust identified between members and officers evidenced during these focus groups, it is clear that many of the concerns voiced would not have been evidenced if the NCO's were in attendance at the focus groups, for fear of repercussions at a personal level or within the military system. Just as importantly, talking to NCO's separately also provided them with the opportunity to discuss their views of trust, and the ways in which they evaluate the trustworthiness of new crew members without having NCM personnel hear these discussions. In the future, it seems important to consider ways of assessing trust without using intact teams, as this seems likely to limit the ability of team members to talk freely, as well as possibly risking harming the dynamics of trust.

First, it is clear that talking about trust is a very personal issue, and people who do so must feel protected in expressing their views about both trust and distrust honestly and candidly without fear of repercussion. As they are often talking about people (i.e., leaders) who hold considerable power and influence over them, they must feel protected that this information will never be shared outside of the context identified during the consent process, and that they will never be identified as individuals. This suggests, in a very real sense, that trust in the researchers will be key to the progression of this research. In this sense, it is clear that the process of briefing and debriefing participants will be critical in this research. Briefings should define very clearly what the goal of the research is and what it is not. Participants need to understand, for example, that the research is simply basic research, based on an interest within Canadian Forces to better understand trust. Some participants within our focus groups wondered whether our research was in some way related to a desire to understand trust within their specific unit or regiment, perhaps as a way of changing the current system. Although identified early and remedied in these focus groups, such misunderstandings in the future could promote hope and/fear of change, and raise expectations that some of the concerns evidenced would be addressed in the near term if they were candid in their discussion of these issues.

Although the issue of confidentiality was very prominent in our pre-focus groups discussions, one issue which was not emphasized enough was the issue of the need for participants to ensure confidentiality of information discussed in the focus groups in discussions outside of the focus group context (e.g. in garrison etc.). Unfortunately, this insight was only formed at the end of the focus groups. Having conducted the groups throughout the day, it was only when talking to crew commanders in the last session of the day that we learned that crew members had voluntarily discussed some aspects of the morning crew member focus groups with crew commanders. In the future, steps need to be taken in the future to address this issue of confidentiality. Although we, as researchers, have little control over the information that our research participants freely choose to share once outside of the experimental context, this issue needs to be addressed deliberately in order to attempt to preserve the confidential nature of the experience on behalf of the other participants who may not consent to having this information (or information relevant to the team generally) shared with others. In the end, this issue may be very difficult to solve completely. Future efforts should be directed toward consulting with experts with specific expertise in designing research with similar ethical challenges, in order to ascertain the best course of action for future research. These efforts should also focus on the issue of how to study trust within intact teams without damaging the dynamics of trust within these teams.

In terms of the next stages of work, we propose to proceed on a number of fronts. At the next stage of this work, developing measures of trust will be a critical basis for a long term program of research.

4.3.8 Proposed Research – Short Term

The quantitative findings in the current work are limited by the fact that they assess trust in general, in terms of how influential specific qualities are in judgements of trust. At the next stage, it will be important to be able to quantify trust in specific relationships (between crew members and between a follower and a leader). This will require developing and validating a direct measure (e.g. rating scale) of trust within teams. This will involve generating a broad set of items which are tested with a large set of small team members, conducting item analysis, and progressively working to refine the rating scale. Efforts will also need to focus on testing both the validity (convergent, concurrent etc.) and the reliability of this scale.

Even as we work to create a valid and reliable direct measure of trust in teams, however, it will also be important to look beyond direct, explicit measures of trust for several reasons. It may be difficult to get individuals to identify their true judgements about how much they trust other members of their team, and especially how much they trust their leaders. Moreover, in light of the ethical issues noted throughout this report, preserving trust within teams may be best served by ensuring that the explicit rating of the trustworthiness of another person is not known even to an individual who gives this rating. This not only prevents the individual from sharing this information with others, but also lessens the danger of influencing trust dynamics within teams by increasing the salience of trust issues. These kinds of challenges call for an exploration of the benefits of using implicit measures of trust.

The concerns that we face in doing trust research, of course, are not unique in psychological research. In a society that frowns upon expressing negative attitudes toward members of stereotyped groups, for example, subjective ratings that tap explicit attitudes are notoriously positive. Measures that deliberately tap implicit attitudes, on the other hand, show that these negative attitudes are often expressed when opportunities to control one's automatic response to members of stereotyped groups are unavailable.

As trust can meaningfully be described as an attitude, it seems logical that the same implicit measures used to explore attitudes could also be used to understand trust as an attitude. The problem, however, will be the level of analysis, and to what level of specificity it will be possible to extend these measures. It remains to be seen whether it is valid to use this measure in order to understand trust within teams. This, of course, is an empirical question that will be resolved, in part, by a review of the implicit measurement literature that is rapidly expanding, and by pilot testing of implicit measures.

Having created both implicit and explicit measures of trust, it will be possible to compare the convergence between the two. A high level of convergence between direct and indirect measures may indicate that even in teams with low trust (as indicated by indirect measures), for example, crew members are reliably willing to report their expectations about the trustworthiness of other crew members. A low correlation between the two may provide evidence that only implicit judgements will provide an accurate account of the status of trust within a team. Whatever the outcome of this comparison, it is critical to create both direct and indirect measures, and to begin to evaluate the psychometric properties of these measures.

Lastly, as noted in the previous trust review (Adams, Bryant and Webb, 2001), the issue of how to conceptualise trust within a team setting continues to be somewhat problematic. One way is to depict the team as a coherent unit from the perspective of team members, whereby team members give their ratings of how much they trust the team (e.g. Dirks, 2000). The other method is to take the ratings of trust for all individual members of the team, and to aggregate this into a measure of team trust (Costa, Rae and Taillieu, 2001). Both approaches have advantages and disadvantages. Treating the team as the level of analysis may be problematic if we believe that team members are not particularly proficient at "averaging" their attitudes, at taking their judgments of teammates (which are often heterogeneous), and somehow arrive at a judgement that reflects the true average of these varying decisions. On the other hand, aggregating discrete ratings of individual team members may not necessarily be consistent with one's judgement about the team as a whole either, in the sense that the whole may not always equal the sum of the parts.

Existing literature suggests that these concerns are also evident in other areas of research, with some possible ways to approach the unit of analysis problem having been explored. From a data analytic perspective, a common approach to working with data from group, aggregation has often been criticized. When aggregating data from any group, for example, one assumes that the aggregated value is, in some sense, unique to the group in question. One would expect, for example, for individuals to naturally vary precisely because they belong to a given group that creates its own culture and milieu. The problem, of course, is that the mere aggregation of any numbers may produce effects which are unique to the group, but which are the product of "grouping" (the mere aggregation effect, independent of true group effects) rather than a true "group effect" (the actual impact of group membership).

This issue has been addressed using a Random Group Resampling approach, in which the effects of a true group-level effect can be disentangled from the grouping effect (Bliese and Halverson, 2002). In short, this approach requires analysis of data from actual groups compared to pseudo-groups, or randomly created samples belonging to the initial population. This approach needs to be explored in more detail, but represents an important way to solve some of the problems inherent in exploring trust at a team level.

Another approach also holds promise as a data analytic tool for understanding trust in teams. Using hierarchical linear modelling, it is possible to understand both individual level effects (from discrete team members), as well as the group-level effects (a product of broader group membership). This approach has been used to understand the relationship between cohesion and several outcome variables (e.g. stress, well-being, identification and combat readiness) at both the individual soldier level, and at the company level, as participants were members of distinct companies (Griffith, 2002). These data analytic techniques need to be explored in more detail in future work.

4.3.9 Proposed Trust Research – Long Term

In the long term, we hope to attempt to validate this model, and to make revisions in accordance with these efforts. Both recent and ongoing efforts to propose models of trust development (both within teams, and in other contexts) will provide assistance both in being able to learn the process by which model validation should proceed, as well as indicating possible pitfalls to avoid.

As work to establish measures of trust progresses, it will also be important to begin to systematically explore the factors that influence trust. With so many different factors impacting on trust, there are also a number of possible starting points. We have chosen to focus efforts on one of the earliest stages of impression formation, wherein individuals asked to consider a prospective team member selectively seek the information that they need in order to make judgements about the new team member. Will team members expecting a new teammate want to know more about competence, or about the new person's willingness to be a team member? Will the information that is sought (and the relative attention paid to the different forms of information) differ when the situation in which the judgement is made indicates a very high level of risk or a low level of risk?

Further along the research program, extending research and theory not just to the antecedents of trust within teams, but also to the impact of trust within teams. The notion that trust within work groups offers performance advantages, and makes groups better coordinated and better able to complete their tasks is, in some ways, almost a canon of trust research. As recent work reviewed earlier suggests, however, there is only limited empirical evidence that this is the case. Moreover, research that directly explores trust in true intact teams is even more rare.

More generally, trust is an issue not just in small combat teams, but in military teams generally. Although the first priority is understanding the trust development process within the specific context of small military combat teams, it is important at all stages of theory development and research that maximal flexibility is maintained, so as to be able to extend the model to closely related contexts. Trust development within command and control teams, for example, is likely to have many features in common with that in combat teams.

As noted earlier, the final model of trust in a team leader represents the first stab at understanding and modelling a very complex process. By its very nature, then, this model is incomplete. As this work progresses, more factors and more complicated processes should be included into the model in order to arrive at the best possible description of the trust development process. Currently, the model addresses the dyadic relationship between a leader and a follower from the perspective of the follower. As indicated by both the focus groups and review of the more recent trust literature, trust in a leader and trust in a crew member interact as well. This interdependence should be depicted in future models. In the future, it will be critical to revise this model of the trust development process to include more of a relational depiction of the trust development process (e.g. Brower et al., 2000). The current model of trust also depicts the trust development process within a particular dyadic relationship within a small team. As noted earlier in describing new models of trust, it would be much more accurate to depict trust within a team as a complex series of many different bi-directional linkages between each team member and every other. The ability to model trust in teams in its full complexity, however, may well be limited by the tools that we currently have available to understand the problem. Certainly, every link affects each other while being affected at the same time.

The model of trust development in teams described in this paper depicts trust at a given moment in time. All of the dimensions within this model, however, are relatively flat. As there is no differential weighting in the lines that link team members, this implies that all factors impact equally through time, and on trust expectations. This is not our view, and this depiction is partly a product of the limitations of the medium (e.g. using a flow charting program) to model an extremely complex process. In reality, it seems more likely that as trust development evolves, the factors that influence judgements of trust vary both in time, and as the result of varying contexts. Similarly, although this model may have some relevance for understanding the development of trust, however, it is not clear that it would be able to accurately depict trust over extended periods of time within a team. The maintenance of trust may require different factors and/or weightings of the factors.

As work in modelling psychological processes progresses, then, it will also be important to look toward more complex efforts to model trust within teams. Finding ways to represent trust in a team at a more flexible conceptual level will hopefully be enabled by the development of more complex modelling environments.

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Annex B - DIMENSIONS AND ASSOCIATED SCALE ITEMS

	Dimension	Scale Items
1	Competence in Military Skills	Tactical skills
		Field craft skills
		Weapon handling skills
		Map reading skills
		Good spatial navigation ability
2	Competence in Leadership Skills	Problem solving ability
		Able to assess risk accurately
		Shows creativity and flexibility
		Able to cope with stress
3	Concern for welfare of others	Does not put career above other crew members
		Makes a contribution to others outside of work
		Puts others above self
		Shows genuine concern for others
		Acts in others' best interests
		Shows respect for others
4	Integrity	Worthy of respect
		Honest
		Deals fairly with others
		Highly developed sense of honour
		Shows integrity through actions
		Worthy of the respect of others
5	Predictability	Actions can be predicted reliably
		Dependable
		Behaves consistently despite the situation
6	Motivation / Initiative	Puts high expectations on self
		Willing to do what it takes to get job done
		Highly motivated to do job
7	Willingness to Accept Responsibility	Willingness to accept responsibility
8	Level of Responsibility Given	Level of responsibility given
9	Communication	Communicates well with others
10	Experience in Military Settings	Experience in the Army
		Operational experience
		Knowledge of one's role
		Experience in other crews
11	Experience in Other Settings	Experience in other teams (e.g. sports)
		Experience outside the Army

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		Operational experience
		Knowledge of one's role
		Experience in other crews
11	Experience in Other Settings	Experience in other teams (e.g. sports)
		Experience outside the Army

	Dimension	Scale Items
12	Physical Abilities	Physical strength
		Eyesight/visual acuity
		Hand/eye coordination
		Endurance
13	Reputation	Reputation
14	Rank	Rank
15	Medals and Honours	Medals and honours
16	Team Orientation	Able to work well with others
		Able to work as part of a team
		Easy to get along with
		Promotes best interests of the team

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14. ABSTRACT

(U) This paper discusses the creation of a model of trust development within small military teams. This work has 3 sections. In the first section, the most recent literature relevant to the issue of trust in small teams is reviewed. Limitations of existing models relevant to trust in teams are considered. In the second section, a preliminary model of trust in small military teams is proposed. This model argues that person-based and category-based factors interact with contextual factors to influence judgements of trust. The third section discusses an effort to refine the preliminary model of trust development in small teams. Focus groups conducted with members and leaders of small military teams provided a strong informal validation of the model. Several factors hypothesized in the preliminary model to impact on trust development in small teams were supported by both qualitative and quantitative results. In addition, the process by which trust develops in small teams was also supported. Based on these results, several refinements were made to the preliminary model, and recommendations about future research are explored.

(U) Ce document concerne la création d'un modèle de développement de la confiance au sein des petites équipes militaires. Il est divisé en trois sections. Dans la première, on examine la documentation la plus récente au sujet de la confiance au sein des petites équipes. On y analyse également les limites des modèles en place. Dans la deuxième section, on propose un modèle préliminaire de la confiance au sein des petites équipes militaires. Ce modèle révèle que des facteurs fondés sur les personnes et sur les catégories interagissent avec des facteurs contextuels et influencent les jugements de confiance. La troisième section porte sur le travail réalisé afin de perfectionner le modèle préliminaire de développement de la confiance au sein de petites équipes. Des groupes de consultation organisés avec des membres et des chefs de petits groupes militaires ont permis de valider officieusement le modèle. On a également recueilli des résultats tant qualitatifs que quantitatifs appuyant plusieurs facteurs du modèle préliminaire qui, selon les estimations, devaient avoir une incidence sur le développement de la confiance au sein de petites équipes. En outre, ces rencontres ont confirmé la validité du processus grâce auquel la confiance se développe au sein de petites équipes. En fonction de ces résultats, plusieurs améliorations ont été apportées au modèle préliminaire, et des recommandations relatives à la recherche future ont été étudiées

15. KEYWORDS, DESCRIPTORS or IDENTIFIERS

(U) trust, teams, Canadian Forces; literature review; model development